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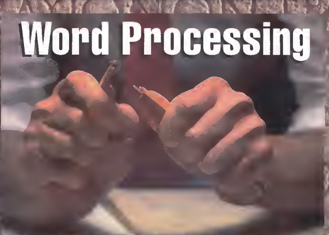

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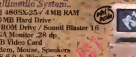

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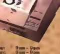

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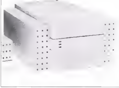

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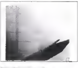

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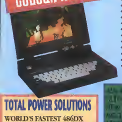

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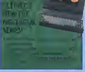

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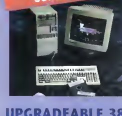

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Sit Down For This

We were disappointed that *The Computer Paper*'s report on Christmas didn't point out that a good chair would make a wonderful $1,000 present

A chair is the second most important tool that computer users need Yet people who spend thousands on high-end monitors, etc continue to use bad chairs They are tired and have back, shoulder and neck pain and they wonder why

Some things to look for in a good chair: a cushion with different densities of foam to provide support and comfort adjustable lumbar support for the back, a gas cylinder to adjust height, a wide five star base; a back and seat that tilts easily and independently Tilt forward to work at the computer; tilt back to talk on the phone

Don't just buy the first chair that feels good and soft because it may not give you enough support when you work for several hours. Borrow a demo chair and work with it for a few days Your mind body and computer deserve a good base of operations.

Beverly Wellman & Barry Wellman
Back Seat, Toronto

We couldn't agree more We must have been napping in our chairs to have missed that one

That Was No Rumor

In the December issue of *The Computer Paper* there is a little rumor article in the News bytes section about IBM preparing to launch a version of OS/2 without Windows, and how IBM won't comment on unannounced products. Yet earlier in the issue is a 2/3 page ad for this "unannounced product" showing all the details, including price Methinks there may be some substance to this rumour

Richard Kirchknopf Toronto

David Tanaka replies. Your observation actually illustrates a basic principle that newspapers try to operate under — the unscalable wall between advertising and editorial We in editorial maintain a professional disinterest in who's advertising, and what's being advertised

FirstClass Fan Speaks Out

Just a quick note to thank you for the great article by Douglas Alder on the FirstClass BBS and Conferencing software (see *The Computer Paper*, November 1993 issue)

I've been a BBS user for about a year and found SoftArc's wonderful system on a local Vancouver BBS called Revelations six months ago. Revelations was a prophetically named board as the FirstClass software is truly a revelation in modeming!

A couple of issues raised in Alder's article need to be raised though First, the article said the current version of FirstClass was 1.6. When I signed on to Revelations I downloaded version 2 0 9 which the "read me" file said was an upgrade The upgrade wasn't an extensive one but, did make available a better selection of modem configurations More

Continued on page 10

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Mailbox

Continued from page 8

importantly, 2.0.9 now creates partial icons until the complete file is downloaded. This allows callers to resume the transfer exactly where they left off of particularly large file on a subsequent call

Perhaps the most important feature for budget minded modem users is that for the user FirstClass software is absolutely free!

Keep up the good work

Mark Laforet Vancouver

Can't See the Macro Forest For The Micro Trees?

There are some serious logical lacunae in your editorial attempt to demonstrate the productivity of computers You have for starters inflated the micro with the macro picture The fourth sense of the word productivity" given by my dictionary the definition you presumably had in mind is this of or engaged in the creating of economic value or the producing of goods and services

Just how much "economic value" (a term which itself deserves to be most carefully deconstructed) does an unemployed person produce? The technological unemployment caused by the microeconomic drive for "increased productivity" produces massive macroeconomic non production

Non producers are non-consumers A limit is eventually reached to the expansion of markets The globe is after all finite The evermore concentrated capital spews out goods at ta rated that the ever-growing ranks of the unemployed cannot absorb because of a lack of what Keynesian economists call "effective demand "

Marx foresaw all this 150 years ago. Now we are witnessing it. Immersed as you are in the glitter of your latest technological toys you apparently can t grasp this relationship as simple as it is between technology and unemployment with all its concomitant social costs That s why I communicated using obsolete technology (the letter was hand written Ed) maybe it will slow you down enough to where you can start thinking clearly again

Davy Moondog (Bouvier)

David Tanaka relies ... Most everyone has experienced a sense of dislocation brought about by our rapidly changing times but the question is whether microcomputers are a contributor to the modern malaise or a source of liberation

A convincing case can be made for either which is probably a good indication that computers are neither

You Say Raydiosity

Ouch I rarely bother worrying about inaccuracies in magazine articles but I simply cannot let Graeme Bennett's bloopers ("At the Movies Software Special Effects" B C Edition Nov '93) go unchallenged

The first one was "Gourand Shading" While a minor point I doubt whether Henri Gouraud would approve of his name being mangled (twice no less) in the "3-D Glossary" sidebar

The second error hit closer to home The proper spelling is "radiosity" a term coined by mathematician Parry Moon in 1936 as an analogue of "luminosity" Whatever "ray

Continued on page 15

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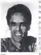


From the Editor

We are continuing our eastward progression by launching an edition for Ottawa Montreal and the Atlantic provinces This new edition solidifies *The Computer Paper's* position as Canada's largest computer monthly and offers advertisers the benefits of targetted regional and national advertising. *The Computer Paper* currently has a circulation of 235 000 With the new edition, circulation will reach 300 000 copies This increase puts us in the big leagues for circulation in Canada According to numbers published in *Masthead* we are starting to hobnob with the likes of *Time Canada* Our circulation rivals the Canadian circulation of major U S computer publications including *PC Magazine PC World Byte MacWorld MacUser* and *Computer Shopper* It is also more than the combined circulation of all of the other Canadian computer specific publications that lay claim to be national (So much for being humble.)

First Edition for February 1994

The new edition is to be launched in February, 1994 with a circulation of 75 000 copies It will be a zoned publication in that local advertisers will be able to select the markets they wish their advertising to appear in National sales will be handled from the Toronto office and local ads will be done by local sales representatives in Ottawa and Montreal. Sales for the Atlantic provinces will be handled by our two resident Maritimers in Toronto

The Growth of *The Computer Paper*

A few weeks back someone from an ad agency called me up and asked for a history of our distribution growth It was something I hadn't looked at before so when I pulled out the numbers I was kind of impressed myself. To the right is the chart of the growth of *The Computer Paper* over the past six years.

Circulation Growth Of *The Computer Paper*

	BC	Alt	Mb	Ont	Eastern	Total
Feb 88	30,000					30,000
Jan 89	40,000					40,000
April 89	48,000	50,000				98,000
May 89	50,000	50,000				100,000
Dec 90	50,000	50,000	20,000			120,000
Mar 93	50,000	50,000	25,000	60,000		185,000
July 93	60,000	50,000	25,000	100,000		235,000
Feb 94	60,000	50,000	25,000	100,000	75,000	310,000

More Doom and Gloom

We cracked up this month when our receptionist came into the production area to inquire where a reader could get a copy of Doom Seems he read the diatribe that I wrote last month condemning the game for being too violent and thought the game sounded good Ahhhhhhh! What we have here is a failure to communicate

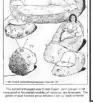
Ah well I see that in this month's *Newsbytes* I seem to have achieved a kind of a Vulcan Mind Meld with Captain Kangaroo who is now advocating a rating system for violent computer games such as Mortal Kombat At least there is someone I can communicate with

Enjoy the issue

Douglas Alder
Publisher/Editor

****

SIGHTINGS Steven M. Johnson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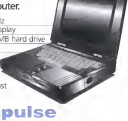
The current enthusiasm over Potato Couch "room groups" is yet more proof of the mental instability of contemporary Americans. The potato-shaped furniture group includes a zip-up "squid comforter"



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ANALYSIS

Holmolka Trial On BBS Raises Information Access Issues

BY KEITH SCHENGILI-ROBERTS

Since July of this year the Canadian media has been muzzled unable to report the details of the Karla Homolka trial. But many local Bulletin Board Systems (BBSes) have been carrying stories and details of the case, which are readily available to anyone willing to spend some time behind a computer equipped with a modem.

The trial of Karla Holmolka who was charged with manslaughter in the deaths of Leslie Mahaffy and Kristen French, concluded earlier this summer. A judge ordered a press ban on the trial proceedings on the grounds that it would jeopardize the chances of a fair trial for her ex husband Paul Teale who faces multiple charges. As a result, the Canadian media was only allowed to report certain facts from the trial, such as the verdict and sentence but not Karla Holmolka's plea. Many Canadian media organizations challenged the ban when it was imposed, however, all save one satirical magazine have obeyed the ruling and have not printed details of the trial.

Subsequently, U.S. and English newspapers have reported on aspects of the case. For the most part, those articles have been banned from Canada. The story has also been carried on American TV programs, such as "A Current Affair" and Buffalo N.Y. newscasts, which have been blacked-out by Canadian cable operators.

But if you have access to local Toronto-area BBSes you can download files relating to the case, carrying the banned details of the trial. Anyone with a keyboard or scanning device and a copy of a banned article can transcribe the story and upload it to a BBS. Anyone else with a computer and modem can then retrieve the article.

> **Anyone with a keyboard or scanning device and a copy of a banned article can transcribe the story and upload it to a BBS. Anyone else with a computer and modem can then retrieve the article.**

This information can spread extremely quickly because the information is passed on from one BBS to another often without the BBS operator's knowledge.

According to Staff Sgt. Roy Watts at Metro Toronto Police Headquarters having possession of information on the trial is not an offense. But having copies for the purpose of distribution is against the law. BBSes are public forums therefore any BBS carrying information on the Holmolka trial is breaking the law. Transcribed articles on the case violate copyright laws, as they have been copied and distributed without the permission of either the writer or the publisher. Canada Remote Systems based in Toronto has recently removed a couple of its conference areas where discussions on the details of the Holmolka trial were carried. In a message posted to all users CRS stated that "posting of this material is illegal" and that they "will take whatever steps are necessary to uphold the law."

This kind of activity on local BBSes has helped bring into question the effectiveness of any sort of publication ban on traditional media. There has also been a lot of controversy recently in Toronto regarding the presence of certain X rated graphics files available for downloading. Police raids on eight BBSes that carried these images resulted in the seizure of thousands of dollars of equipment and the shut down of those BBSes.

The availability of information on the Holmolka trial is bound to cause further controversy in the Toronto BBS community. The speed with which information flows from one BBS to another ensures that it is nearly impossible to stop.

In the larger perspective it brings into question a basic democratic fundamental: is the general public's "right-to-know" violated because only people with a computer and modem have access to this type of information? No matter what the outcome of Paul Teale's trial computer users have access to information unavailable to most Canadians. ■

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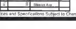

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Mailbox

Continued from page 10

diosity" came from is a mystery only the author of the sidebar can answer. Perhaps it came from the same dictionary that spells "refraction" as "refractivity"? Again, ouch!

More serious is the amount of misinformation that was squeezed into one brief paragraph. Radiosity is in no manner "similar [to] but more elaborate (and slower) than Ray Tracing (sic)." It does not model surface textures (a separate technique called "texture mapping" is required), and it models specular reflections (including those from mirrors) and atmospheric "conditions" (i.e., effects such as smoke and fog) only with extreme difficulty. It most definitely does not model the refraction effects that are ray tracing's forte.

Ian Ashdown, Vancouver

Graeme Bennet replies: *The following information is excerpted from Strata Inc.'s StudioPro manual:*

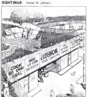
The spelling variation from the accepted term of "radiosity" is intentional. This is because Raydiosity is the name of a proprietary algorithm StudioPro uses that is substantially different than the radiosity technique developed at Cornell University. StudioPro's Raydiosity rendering algorithm is view dependent, but renders much faster for single images. The finished Raydiosity image, however, looks remarkably similar to that achieved on high-end platforms.

Raydiosity can calculate rendering effects even the venerable raytracer cannot do. Effects like the illumination of translucent objects and bleeding colors from one brightly lit object onto the surface of another. Effects like bouncing illumination from a light source off a white wall to provide softened fill lighting on the back side of an object.

Raydiosity calculates the illumination contributions by reflected light from nearby objects. This is an advanced aspect of photorealism that raytracing does not (and cannot) consider in creating its images.

Because of the time required to perform these calculations on the Macintosh platform, this algorithm is rarely usable in day-to-day production work. Strata Inc. offers Raydiosity as a semi-experimental rendering method. Just be sure you have enough quarters (time) to "feed the meter." ■

SIGHTINGS Steven M. Johnson



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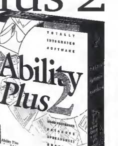

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BY KEITH SCHENGILI-ROBERTS

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WINDOWS

WordPerfect has finally released a Windows word processor worthy of the name. Previous Windows versions of WordPerfect felt like evolutionary throwbacks, retaining too many DOS-related features from its best selling DOS word processor which translated clumsily into the Windows environment.

WordPerfect has started from scratch with this product. While regular WordPerfect users will find many familiar features, this program was obviously made and optimized for the Windows environment, and it shows. Unfortunately, this otherwise excellent package is marred by a lack of attention to detail. This program is impressive, but think of it as a diamond in the rough.

The hard drive requirements are steep in comparison to most other word processing programs — it requires 33MB for a full install

Continued on page 17

ANALYSIS

Word For Windows 6.0

BY GEOF WHEELWRIGHT

Microsoft's introduction of Word for Windows 6.0 marks the 10th anniversary of the first release of Word for the MS-DOS market, as well as a bringing together of word processing development work across platforms and across applications.

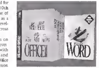
Not only are Word developments on both Mac and Windows closer than ever, but Word is now often being sold with Excel, PowerPoint, Microsoft Mail and Microsoft Access as part of Microsoft Office or Microsoft Office Professional — Version 4.0 of which was launched at the same time as this new version of Word.

Microsoft is boasting that Word for Windows 6.0 brings "intelligent automation" to users.

Note that the product is called Word for Windows 6.0 (rather than 3.0) because Microsoft says it wanted to synchronize version numbers between the Mac and the PC. Mac users were already on Version 5.x. It probably also didn't hurt that WordPerfect was about to release its WordPerfect for Windows 6.0 and Microsoft was able to use this excuse to ensure that it was able to match WordPerfect's version number.

So what's all this intelligent automation stuff? Microsoft says it's about intelligently predicting your next step and then taking it for you — going "beyond ease of use" by eliminating the steps to carry out tasks and, where steps couldn't be eliminated, creating a visual metaphor to the necessary steps that is clearer and more "fool-proof."

Continued on page 20



Microsoft says about 50 percent of the sales of Word are made as part of its Office suite

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WordPerfect 6

Continued from page 16

— but with all of its functions, its total size ought to be compared against a suite of programs. Just think of it as a combination word processor / spreadsheet / graphics package and you'll begin to see why the program is so large. In fact it has most of what you need to do basic desktop publishing, and many people will find it is all they need to produce professional-quality documents and small publications.

Installation is a smooth process, and it prompts the user for the features it should install. This can reduce the amount of hard disk space used by the program considerably if you don't want all of the new capabilities WP6.0WIN offers.

you'll never lose track of what all of the little icons on the button and power bars do, as the space at the top of the screen changes to tell you what function the icon performs as the cursor passes over each

Hey Coach, What Do I Do Next?

One of the best features about this program is how easy it is to configure your working environment to suit your needs. In addition to the familiar button bar, which gives you basic file commands, you now get a power bar with basic formatting commands and a ruler bar. These features are seen in other Windows word processing packages, but the difference here is that you can change the contents of them at will (or get rid of them entirely), so you can put the functions you use the most a single mouse-click away.

In this program, you'll never lose track of what all of the little icons on the button and power bars do, as the space at the top of the screen changes to tell you what function the icon performs as the cursor passes over each of them. I found this feature very handy, because I'm one of those people who doesn't always find the meaning behind icons is very obvious. It should also be handy for beginning users. You can always find out what options are immediately available to you anywhere in WP6.0WIN by clicking on the right mouse button, which provides a context-sensitive menu at the tip of your cursor.

The built-in "coach" feature, first seen in WordPerfect 6.0 for DOS, is a great way to beat the learning curve. Hit the appropriate icon and the program will walk you through a specific function, so you learn how to use the function while actually doing something useful with it at the same time. If you want to learn how to put in footnotes while writing up a paper, just click on the coach icon, select "footnotes" from the menu, and follow the computer's on-screen instructions as you are guided along. When you are done, the footnotes you wanted to include are there.

One of the best features of WP5.2Win was the Quickfinder utility. It allowed the user to search for keywords in a number of files. This makes locating a single file out of hundreds an easy process. The problem in WP5.2Win was that you had to get out of the wordprocessor to run the utility and locate the file you wanted. You then exited Quickfinder, got back into WordPerfect, located the file again and then opened it. Thankfully, Quickfinder is now imbedded within WordPerfect, so you can easily do keyword searches from within the program and get to the document you are searching for immediately. This one feature alone will be worth the price of the program for people who generate a lot of files and can't always keep track of what was said in which file.

Not Just a Word processor

For those who need a good spreadsheet program for doing basic work, the spreadsheet and chart drawing functions incorporated into WP6.0WIn will suit your needs. Besides being very easy to use, it also has a few nice extras, like automatic fill capabilities seen on more robust spreadsheet programs, and the ability to import database files which you can then sort out and filter to a table within a WordPerfect document.

One of the most impressive new features of WP6.0Win is its extensive graphics capabilities. You can import pictures into a docu-

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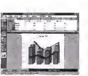
ment from more than a dozen different graphics formats and you can easily move them around in your document

What s new to this version is the ability to automatically wrap text around an image and to edit the content of a graphic This is a welcome feature, as previous versions of the program were hampered by the fact that you had to exit the program if the image you were trying to import didn t quite look right Now you can adjust a picture s contrast, insert graphic files within other graphic files draw in new lines and shapes change or invert colours, and utilize many other features you'd expect to see in professional graphics packages.

Devising columns in WP5 1DOS used to be the hallmark of a true WordPerfect wiz ard Now columns are easy to define with pop up windows that give you a preview of what your document will look like while you are formatting it.

You can throw up borders and use various fills to punch up the look of your documents You can also automate your documents by using a template feature which automatically lays out standard forms for business letters fax sheets signs, resumés title pages, reports and many other document styles Users are also able to transfer files easily between WP 3.0 for the Macintosh and WP6 0Win Add to this WP6 0Win's other standard features, like the grammar-checker, thesaurus hypertext features the ability to imbed sound files, and a dozen other minor functions, and you have a program you can just about "live in" and not have to bother with anything else


Charting features are built into WP6.0Win

Speedy it isn't

There are some problems with this release however When it was being put together, it's code name at WordPerfect HQ was "road-runner", emphasizing the speed of this program over WP5 2Win Despite the name you will want a fast computer to run this program WordPerfect recommends as the minimum system configuration a basic Windows-capable computer (386SX 4MB RAM) In practice, you will find WP6 0Win annoyingly slow in many areas unless you are using a speedy 486 machine with a lot of memory

There are also some minor problems which should have been ironed out before release For example, the spell checker is slower than in previous versions, and it has the annoying habit of hiding sentences containing misspelled words behind the spell checker dialog window Furthermore the American version I had sometimes stops working altogether when a spell check is done on an old WordPerfect document formatted in Canadian English

The "coach" feature while good only covers a dozen different topics within the program Once people discover it, they will be disappointed that it does not show you how to do everything within the program The Word Count feature, handy for checking the total size of a document is now less conveniently included as part of the Document Info window

For some reason the "print preview" command, which has been a staple of WordPerfect products for years is suddenly gone Well not actually gone but incorporated into the new "Zoom" feature If you are used to using page preview to look at your document before you print it, you have to find out that it is part of the zoom feature and then figure out how it works It would have been nice if WordPerfect could have pointed out these changes to old WordPerfect users accustomed to these features but instead you ll just have hunt for them These are not major problems but a bit of polishing here and there would have made WP6 0Win truly shine.

This is a good solid word processing package which definitely shows the way things ought to be heading in the cut-throat business of word processing software However if you plan on using the program for anything more than basic word processing, make sure you have a fast computer There are a lot of minor problems with the program, and you can probably expect WordPerfect to provide minor tweaks here and there to the program at a later date While I can't recommend this program whole-heartedly it is definitely worth checking out ■

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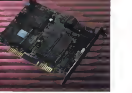

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Word for Windows

Continued from page 16

Why Intelligence?

Microsoft says it carried out a great deal of research before settling on its new features for Word — collecting reams of user feedback running hundreds of tests, and recording hundreds of thousands of keystrokes

New Features

Microsoft concluded from its research that innovations in everyday tasks can impact both high end features that the experts use and the more common features that everyone uses so a lot of the improvements are to "core" word processing features. Many of these core tasks — entering text manipulating text and formatting text — can be unnecessarily time-consuming so Microsoft found ways to simplify or avoid them

AutoFormat — Because users found that they spend more and more time formatting their documents Microsoft has included AutoFormat. Once a user has created a document the user selects AutoFormat and a selection of different styles appears. The user simply chooses one of the document styles and applies it to the document. Word 6.0 ships with several different styles and even allows users to customize their own

AutoCorrect — AutoCorrect automatically corrects misspelled words and common typing mistakes. When Microsoft started analyzing what users did when they were doing a spell check, it found that more 20 per cent of the time a word was flagged as misspelled due to simple typing errors. In most instances, users didn't have to do anything but accept the default spelling suggestion. So Microsoft concluded that users didn't need a better spell checker but actually needed their word processor to catch their typing mistakes

AutoCorrect takes care of this. If you type for example the letters teh when you meant to type the AutoCorrect will automatically correct this. Similarly it will automatically capitalize the first letter of every word following a period

Wizards — Microsoft's Publisher desktop publishing program was the first Microsoft product to incorporate Wizards which ask a set of questions based on formatting and content preferences and quickly create the look you want. Microsoft Excel version 4.0 followed closely behind. Now Microsoft is bringing them to Word for Windows 6.0 where you can select from a variety of wizards including memos newsletters agendas and resumes

Forms — One of the top requests from users to Microsoft was apparently the ability to create modify and work with forms. For Word 6.0 Microsoft collected business forms from more than 100 companies around the world with the goal of letting users create 90 per cent of all business forms they need with Word and to make forms-creation simple enough to figure out on the first try. Standard forms such as expense reports and invoices are also included with Word 6.0

Better integration and consistency with other Microsoft applications — Microsoft found that 85 percent of a survey group rated software that works together to be a critical factor in evaluating applications. This research also found that the most important product combination is a word processor and a spreadsheet

As a result there is a new toolbar icon that will automatically insert a Microsoft Excel 5.0 spreadsheet into your Word document. There is also a consistent set of menus toolbars and program behaviors between Word and Microsoft Excel that are intended to reduce training time and cost

In addition Object Linking & Embedding (OLE) Version 2.0 capabilities provide an enhanced interface drag and drop text editing between applications and in place editing. With in-place editing you just click on an object in Word a Microsoft Excel spreadsheet for example

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and the Microsoft Excel tools appear right within Word. There are also electronic mail functions now built right into Word for Windows 6.0 to help you "route" documents from one person to another over E-mail.

AutoText — Allows users to store "boilerplate" text for re-use across all their documents. The user simply inputs the abbreviation for the text and Word 6.0 automatically expands it.

Customizable Toolbars — Give you immediate access to the tools you use every day. You can create your own toolbars and then display them anywhere on the screen. The formatting toolbar and ruler let you choose font sizes, font styles, margins and tabs with a single mouse click.

A 100-level undo — Shows you a running list of past actions. You can track what you've done in the document and undo it all with a click.

Drag and drop text editing — Lets you move text and graphics with the mouse. This new version even corrects word spacing in the text that you move.

AutoSum — Automatically totals column data in tables for you. You don't have to switch programs to do simple math operations.

Integrated grammar and spelling checkers — They spot errors, suggest corrections and run faster because they're part of the word processing program as opposed to being external add-ons as they were previously.

Revised Drawing Tool — Lets you make graphics and use drawing layers. For example, now you can create watermarks or logos and place them behind the text in your document.

Simpler tables and table formatting — Lets you insert a table by clicking the Tables button and apply any of 11 supplied table formats by clicking Table AutoFormat.

Smart bullets and numbers — These make it easier to create and rearrange lists. Word automatically bullets or renumbers paragraphs as you edit. New Variable width columns let you create up to eight columns of text when you click the Column button.

Group review and editing features — These let you distribute documents for review. Then, you can review all changes online or compare two versions of the same document to highlight differences.

To run Word for Windows 6.0, you will need Microsoft Windows 3.1 or later, a PC using 286, 386 or higher microprocessor, at least one 3.5 inch high-density disk drive, 4 MB of memory and an EGA or higher resolution monitor. ■

How Do You Create a...

Here are some shortcut keystrokes for those often-used characters

Windows users

Use the numeric keypad with the Num Lock on

Alt-0188 for ¼
Alt-0189 for ½
Alt-0190 for ¾
Alt-0233 for é (e with acute accent)
Alt-0224 for à (a with grave accent)
Alt-0151 for — (em dash)
Alt-0169 for © (copyright symbol)
Alt-0174 for ® (Registered symbol)

These are typeface dependent to some extent, so these accelerator keys will not work with faces that map the keyboard differently.

For a full mapping of characters in each typeface, use the Character Map applet (found in the Accessories directory) that comes with Windows 3.1.

On the Mac, the keystrokes are as follows

Option e-e for é (e with acute accent)
Option -a for à (a with grave accent)
Option shift-<hyphen> for — (em dash)
Option g for © (copyright symbol)
Option r for ® (Registered symbol)
Option 2 for ™ (trademark symbol)
Standard Mac character sets do not provide built-in fractions, although:
G in certain Adobe's Expert Collection fonts (e.g. Garamond Expert Italic) gives you ¼
H in certain Adobe's Expert Collection fonts gives you ½
I in certain Adobe's Expert Collection fonts gives you ¾

Apple's Key Caps desk accessory makes it easy to select, copy and paste these and other exotic character combinations into your documents from within any Mac application. ■

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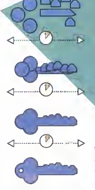

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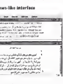
How does one undertake word processing in English, German French, Arabic, Greek, Cyrillic Hebrew and Persian? Purchase eight word processing programs? How many more programs are needed to write each of these languages in the same document? Can't be done, you say? In today's global economy, with international scholarship politics and business cross-cultural communication is a fact and Multi Lingual Scholar can handle it.

Multi-Lingual Scholar (MLS) is a word processing program that gives full access to all characters and diacritical marks found in English (or other Roman script based languages) Arabic Greek, Cyrillic Hebrew and Persian If your needs exceed this standard package of Multi-Lingual Scholar supplementary alphabets are also available You can word process in Urdu, Hindi Thai Vietnamese and Inuktituk There are currently 57 fonts available If your language requirements are more arcane then Font Scholar a program packaged with MLS gives you the ability to create your own language font Using Font Scholar you can edit or create fonts and special characters — you can even word process in Klingon

In addition to features found in standard word processing programs MLS can combine left to right and right to left languages, such as English Arabic and Hebrew in the same document Different default settings can be set up in initialization files for language combinations that are frequently used or for special language jobs There are also keyboard maps that emulate the normal keyboard arrangement for the chosen language In some languages you can use a phonetic keyboard arrangement to facilitate learning Finally MLS can be set up so menus and messages are in the language of your choice

Windows-like interface



The user interface is Windows-like and uses both keyboard and mouse A drop down menu bar is located at the top of the screen The ruler bar contains special tab margin indent line spacing and justification choices Formatting from the ruler by mouse is quick and easy You can also create style sheets for consistency and ease of use All choices possible in MLS can be set up in the style sheets Languages and other selections can be chosen by mouse keyboard "hot keys" or special "fire keys" Menu selection is via mouse or ESC plus letter keys Using fire keys is the quickest method of selection The case sensitive fire keys skip the menu bar and go directly to the dialogue box or function you want For example, ALT+SHIFT+L opens the language selection menu The same feature accessed by hot keys on menus requires ESC+S+L then positioning the cursor to the specific language choice and finally ENTER to select Fire keys for bold and italics are ALT+B or ALT+I whereas hot keys are Esc+S+A+B or Esc+S+A+I respectively

To begin editing you choose "new" or "document" from the file menu With "document" a series of menus are used to select a previously created document "New" gives a blank screen with formatting based on the default style sheet Formatting can be changed using the mouse and ruler icons or by using the style menu Editing is the same as with any word processor and word wrap works with every language To insert a foreign word based in the Roman script such as Italian or French it is simply typed A combination of SHIFT CONTROL or ALT keys will access the characters required

Left and Right Writing Supported

To enter a word or phrase based on a different alphabet the language is first chosen through the style menu and/or language selection menu The chosen language will be seen on the screen as you type

However, if the language flows in the opposite direction to the original language, then the letters will be pushed out from the cursor but read in the correct direction for that language It is recommended that this opposite flowing text be surrounded by spaces entered in the dominant language of the paragraph This makes blocking and editing easier MLS also recommends this to assure the correct and proper spacing of the words

Diacritical marks can be added to characters using function keys Arabic Persian and Urdu require this to eliminate ambiguity or for poetic reasons Diacritical marks may be added immediately after a letter is typed or you can go back and add them later Diacritical marks are toggle keys so typing them a second time deletes the mark

Using Font Scholar you can edit or create fonts and special characters — you can even word process in Klingon.

Since MLS can be used for languages that are written in either direction, special attention must be given to cursor movement at line and paragraph ends The default settings of MLS determine paragraph direction based on the first character in a paragraph However, you may need to override this — for example when creating a paragraph that begins with a word from a language that flows in the opposite direction from the dominant language MLS allows this using a special invisible "zero width space" character This character "isolates" the first character in a paragraph without disturbing the direction and formatting of the rest of the paragraph

This is an important feature since margins tabs and indents are based on the direction in which the language of the first character in a paragraph flows Upon entering this special character the opposite direction word or phrase is typed and the main language is then reselected and editing continues These features are fully applicable to footnotes headers and footers MLS also sorts searches and searches with replace in any supported language MLS can spell check a multiple language document in one pass if the appropriate dictionaries are loaded

In the cases of Arabic Persian and Urdu the letters of the alphabet have different shapes based on their position in a word MLS calls these contextual alphabets These languages are also semicursive so certain characters do not connect. MLS has taken all of this into account As you type these languages the letters assume the appropriate shape It is quite remarkable to see this happen It also means these languages are always correctly displayed which is obviously an advantage in editing Diacritical marks are not a part of the letters. They are on the function keys and can be applied when needed Finally the word "Allah" is one unique indivisible calligraphic entity Although a minor point to most people, I mention this because it reflects an unusual sensitivity to Muslim thought and Gamma Productions ought to be congratulated

The ruler bar with icons for indent tabs margins, line spacing and justification is usually visible at the top of the document However the ruler can be turned on and off In bi-directional editing it can be reversed so the settings used in English for example can be applied easily to Hebrew or Arabic within the same document Another unique bi-directional feature is the ability to flip a paragraph When this is done tabs line indents and paragraph justification, are realigned to the opposite margin The direction of the language used determines cursor movement Consequently blocking editing and moving text can be confusing until proficiency is gained

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Setting Type

Multi Lingual Scholar can change point size as well as character attributes such as bold italics and underlining These choices stay in effect until turned of so you can set bold and type in several languages and they will all be in bold However, other settings have other uses in Multi Lingual Scholar

Line spacing for example can be automatically or manually set Set manually it remains the same regardless of the language font or point size used In MLS some languages need more vertical space than others On aesthetic grounds at least vertical spacing can be a problem For example when used with English I would recommend changing the point size of Arabic or Persian Increasing point size causes it to print at the same height as the English and gives a more balanced look

In MLS the setting of type style requires that a number of adjustments be made Once a setting is established it can be copied and moved The settings are copied by pressing ALT F1 with the cursor positioned on text having the desired type style Pressing Alt F2 with the cursor repositioned copies the style there This can speed up formatting especially for complicated settings On the other hand if style sheets are used this is not necessary since a style can be assigned at any point in a document with a couple of keystrokes

Paragraph page division and chapter settings can be individually set. These are self explanatory except for division In MLS a "division" is a document sectionwith different formatting that is longer than a paragraph and shorter than a chapter One common division formatting difference is the number of columns MLS can create multiple columns and has three column types from which to choose snaking (newspaper) balanced (equal length) and side by side (parallel)

Output

Documents created in MLS are graphical By creating graphical documents MLS can show and print all the characters and symbols necessary to be a multiple language word processor MLS supports both dot matrix and laser printers Dot matrix printers produce documents of surprisingly good quality although printing speed is slower Documents can be printed to screen printer or files They can also be printed page by page as PCX files and imported into desktop publishing or other programs as pictures This is how the MLS manual was done

Detractions

Aside from the special learning situations which exist because of the nature of the program there are a couple of items that are frustrating with MLS Surprisingly the program is unable to delete a file which could be considered a major failing File deletion must be done from DOS or a utility

Not surprisingly, however the manual has weak points One is that the index could be more comprehensive Some terms that one would expect to find do not seem to be included They may be found under special terms used by MLS but should have been cross-referenced from terms that are more common to word processing

Font Scholar although capable of great service is confusing to use. Again the manual requires a great deal of study to make Font Scholar comprehensible The problem arises in part because of the need for several font files to run a language such as printer and screen fonts different sized fonts bold and italics This can lead to confusion in font creation and in keeping track of them Instructions on how to map characters to the keyboard are not clear and even though it is possible to modify and add characters to fonts, it does not seem possible to map them to the keyboard based on supplied instructions

Multi-Lingual Scholar can work with 1MB of RAM but you will not be happy with it consider 2MB a minimum The program is much quicker and the extra RAM is recommended by Gamma Productions Inc A 386 based computer should be considered the minimum Other system requirements are listed at the beginning of this article The program is write protected requiring an "actuator" plug which connects into the printer line MLS will not load without it

Multi Lingual Scholar is a utilitarian program designed to fill a growing need in today's world This is the program for full-fledged word processing in multiple languages MLS is devoted exclusively to fulfilling the needs of multilanguage users who wish to communicate via the written word ■

Walter Eisenbeis has a Master's degree in Islamic Studies and lives in Mississauga, Ont.

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WORD PROCESSING

Ami Pro For OS/2 Word Processing 'just the way it should be!'

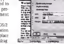
BY JOHN P. BOYCE

Many people considering a switch from a DOS/Windows environment to OS/2 have been concerned over the dearth of mainstream 32-bit OS/2 applications. This situation has been remedied to a degree with recent mainstream word processing offerings from Lotus Development Canada and WordPerfect Corporation.

With the release of Ami Pro 3.0 for OS/2 Lotus has created a native 32-bit application that integrates nicely with OS/2's workplace shell. Documents are created by simply dragging a new file off a document template onto the OS/2 desktop or into a work area folder. Existing documents are automatically associated with Ami Pro and can be opened by a double click, or dragging and dropping onto the program object —just the way it should be.

Lotus has enabled full High Performance File System (HPFS) support in Ami Pro for OS/2, allowing users the luxury of descriptive filenames up to 254 characters, and banishing forever the cryptic 8+3 filename we've all grown to love under DOS.

All configuration and preference options



are handled by the familiar notebook settings consistent with the OS/2 user interface. As an experienced OS/2 user, you'll find menus and controls just where you expect them to be. hunting is an outdoor sport you'll have to practice elsewhere!

The true advantage of a natively written OS/2 word processing application becomes immediately apparent the first time you send a document to the printer. Ami Pro creates a separate process or thread to send the job to the printer in the background while immediately returning control to the user so that they may continue with their work — just the way it should be.

Other examples of multithreading and its benefits are background formatting and a truly non-intrusive autosave function that operates transparently to keep your document saved right up to the minute (literally!)

Lotus has equipped Ami Pro with an impressive set of word processing tools including outlining, revision marking and simple table creation/editing. Items of particular note include one of the easiest equation editors I have yet encountered, and simplified footnote creation. Both features are missing from the current release of Describe, another OS/2 word processor. In addition to the prerequisite spelling checker, Ami Pro also includes a thesaurus and grammar checker from the Houghton Mifflin Company.

As a first time user of Ami Pro in any environment, I was a bit overwhelmed by the vast and comprehensive collection of document style sheets included with the

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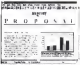

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Use of style sheets is simplified with a menu system that presents you with a "fill in the blanks" form The information you provide is automatically incorporated into the style sheet formatting it appropriately

REXX Friendly

All these features distinguish Ami Pro as a powerful yet easy to use word processor for the OS/2 environment The feature that I believe sets it apart from the competition however is its full integration with REXX the powerful batch programming language bundled with every copy of OS/2 Ami Pro lets you run REXX command files directly from within the word processor or call them from macro procedures

You'll find menus and controls just where you expect them to be; hunting is an outdoor sport you'll have to practice elsewhere.

Parameters can be exchanged between REXX command files and Ami Pro macros, and functions of one type can be embedded in the other All in all this greatly improves the capability and flexibility of what you can do with a wordprocessor that is so tightly integrated with a powerful operating system

Lotus has kept us waiting for a long time for this release and from my perspective the wait was well worth it While I believe Ami Pro will become one of the premier applications for the OS/2 platform as with any program it is not without its warts.

To accomplish all its magic the executable alone is 3 8 MB in size and takes more than 30 seconds to load on a 33 MHz 486 with 8 MB of memory And don't think of running it with 8 MB unless you've got a lot of time on your hands and a lifetime warranty on your hard drive Ami Pro consumed over 6 3 MB of RAM for a single page all text document when I loaded it on my own machine with 16 MB

While multithreading is used to a degree performance and usability could be improved by more extensive use For instance I would like to be able to pull down a dialog box and read the various options available while continuing to work on my document At the moment this isn't possible

Postscript

Originally the intended focus of this article was to compare native OS/2 word processing applications recently released by WordPerfect and Lotus from an experienced OS/2 user's perspective Unfortunately at the time this article was being written WordPerfect announced that it was discontinuing development on WordPerfect 6 0 for OS/2 leaving the interim 5 2 release essentially obsolete A comparison between the packages was therefore no longer as meaningful as it could have been

WordPerfect's decision is regrettable and has been viewed as a great disappointment by the OS/2 community Thankfully Lotus has introduced a solid product that provides capabilities and features that even the most devoted WordPerfect user should be happy with in a native OS/2 environment ■

John Boyce is an OS/2 user and enthusiast living in Vancouver

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Music Tutors: Look, Listen, and Count

BY MARK HANEN

Product: Soloist US $59.95
RhythmAce $US 99.95
Play It By Ear $US 99.95
From Ibis Software
(415) 546-1917

Summary A computer tutor can't take the place of music lessons, but these three programs from Ibis Software can help students practice the quintessential elements of music reading, counting, and listening. With the exception of Soloist, which requires a 286 or higher and a sound card, they run on 640K machines under DOS. All three are well suited to beginning instrumentalists and vocalists, but the reviewer particularly recommends RhythmAce and Play It By Ear

Computer Assisted Instruction (CAI) burst on the scene in the late 70s when Apple computers blossomed in North American classrooms. Mother boards and monitors were going to revolutionize education and threaten teacher's jobs. Since those heady days full of unrealized promises I have been cautious around software that invites me to "Learn" Learn Fractions. Learn to Spell. Learn To Play the Piano. But, change the word "learn" to "practice", and we are closer to the truth.

Much of what is called Computer Assisted Instruction is really Computer Assisted Practice (CAP), and in the realm of practicing music CAP finds its ideal home. Soloist, RhythmAce and Play It By Ear are not promoted as software that teach music theory or replace interaction with instructors and other musicians. Rather Ibis Software claims they make rote practice more effective and interesting. And all three programs do just that.

SOLOIST

The concept is clever. Working in harmony with a SoundBlaster sound card, Soloist displays a series of notes on a musical staff and plays them through the SoundBlaster. You are then challenged to read the notation and play, or sing, the notes into a microphone connected to the SoundBlaster.

As you play or sing, the program simultaneously checks the pitch of each note and immediately reports if the note was right or wrong by placing an X or a check mark next to it. This happens in real time, so you know instantaneously if a note is correct. In addition, a light bar at the bottom of the screen slides left or right indicating whether notes are sharp or flat.

In game mode, the level of difficulty and tempo are controlled automatically. The program records your progress and advances you to the next level of play if the score is high enough. There are 36 levels, each one spanning a three octave range. The keys of C, F, and G are covered, as are accidentals and bass and treble clef. In practice mode the student selects the level of difficulty and tempo. Also under control is the degree of inaccuracy the software tolerates. If the forgiveness factor is high, a note can be slightly sharp or flat and the software still accepts it as correct.

I experimented with Soloist in three ways: by playing an acoustic guitar into a microphone connected to my SoundBlaster, by plugging an electronic keyboard directly into the SoundBlaster, and (to the horror of my family) by singing into the microphone. Everything worked beautifully. It sampled instruments and vocals accurately and pro-

Continued on page 28

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Music Tutors

Continued from page 26

vided immediate feedback. I can now almost sing a C major scale.

Soloist is useful for children and adults practicing scales and melodies. It works with any instrument or voice, provides self-paced drills with continuous and immediate feedback, and adds an element of fun to a necessarily repetitious task.

The only unfortunate aspect of the program is that when a note is played wrong, a small X appears next to the note and bigger red Xs accumulate in the "demerit panel" at the bottom of the screen. Collect eight of these demerits and it's game over. This is discouraging for beginners. Also unfortunate are the program's two rewards: a happy face and an often ironic message, "All right! You're one of the best," which appears even when the screen is full of accusatory red Xs. False praise and negative feedback are not good motivators.

Nonetheless, I was impressed with the program's accuracy and speed. It makes practising note reading a little more fun, and you always know if you are playing the right note.

Soloist is useful for children and adults practicing scales and melodies. It works with any instrument or voice, provides self-paced drills with continuous and immediate feedback, and adds an element of fun to a necessarily repetitious task.

RHYTHMACE

While Soloist concentrates practice on note reading, RhythmAce focuses attention on rhythm training practice. Rhythms sound through the computer's speaker, or via a sound or MIDI card, and the student taps them back in.

RhythmAce operates in three modes: 1) Reading: It displays and plays a rhythm, then you play it back. 2) Dictation: It plays a rhythm, then you enter the correct notation by selecting from a menu of whole notes, half notes, etc. 3) Custom: you enter your own rhythmic notation and the program drills you on it.

Rhythms are played using the shift keys on the computer's keyboard, or with an optional mouse or MIDI instrument. As you practice single or two-handed rhythms, the software provides continuous and sophisticated performance feedback. Graphics show whether you are playing on the beat, early or late. Missed beats are framed, and statistics appear at the end of each exercise indicating your timing and sustain accuracy as a percentage. The program also maintains a progress chart showing your development over time.

Notation values in the exercises range from whole notes to sixteenths and include dotted and tied notes, rests and triplets. Pull down menus give full control over exercise parameters such as tempo, time signature, included notes and rests and exercise length. The performance option even contains settings for the style of play the program monitors: staccato, normal, or legato.

The process of customizing the program is sophisticated in concept but easy to accomplish using point and click menus. For instance, the "Included Notation" menu contains icons of notes, ties, and rests. Leaving a blank under a note excludes that note from appearing in any exercise. Placing an

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"M" under it forces it to appear in every measure of the exercise. And marking it with an "S" means it appears randomly. Once options are entered, the program generates exercises based on the settings. This high level of control over both reading and dictation exercises lets you find that ideal practice level where you are challenged but not frustrated.

PLAY IT BY EAR

Like Soloist and RhythmAce, Play It By Ear is a Computer Assisted Practice program for instrumentalists and vocalists. Providing self paced, interactive practice in ear training, it is a clear winner — a wonderful program for beginners and advanced students.

Ear presents hundreds of exercises in recognizing melodies, intervals, chords and scales. It provides virtually unlimited control of all its parameters through a series of elegantly designed pull-down menus. Although the program works with MIDI and sound cards, its minimum requirement is a mouse and DOS 2.0 or higher.

Ear divides its exercises into two categories, Compositional and identification. In composition exercises, you listen to music then play it. Choosing between a piano or guitar interface, you click on keys or fret string positions to sound notes. If you have a MIDI interface, simply play your MIDI instrument to enter notes.

There are five compositional exercises based on 1) single notes, 2) melodies, 3) intervals, 4) chords and 5) scales. As you play correct notes, Ear automatically advances the exercises and charts your progress as a bar graph.

All the exercises can be fine tuned. When practicing melodies, for example, many parameters are set using easy-to-follow pull-down menus. You control duration of notes, number of drills in an exercise, scale on which the exercise is based, range of notes within a scale, root note, and melody length. There are 14 scales or modes to choose from in the melody exercise, or you can build your own scales.

Chord exercises are similarly versatile. Chord options let you choose among major, minor, augmented, diminished and suspended chords including 7ths, 9ths, 11ths and 13ths. By simply pointing and clicking, you also program which triads to include, inversions, the root of the chord, moving roots, and arpeggiation. This lets you start with a manageable range of triads to identify. You then add inversions, and as you become comfortable, change the root, then increase the range of possible chords.

Identification exercises are customized in the same way. What differentiates identification exercises is that after Ear plays an interval, scale or chord, you select its name from a list rather than play it. It's like a multiple choice quiz.

Ear is a comprehensive, flexible, user friendly program. If you play a wrong note the software simply crinkles the stem of the note and gives you another chance. Ear lets you control the level of difficulty of its many interesting exercises, and it rewards and challenges the dedicated student with a bar graph that accurately reflects progress over weeks and months.

All three programs were easy to install and learn. The documentation is exceptionally well written, and the customer relations department is knowledgeable, helpful and friendly. ■

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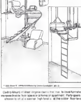

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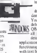

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Back It Up

BY KEN CLARK

What, me worry?

Backing up a computer has about as much glamour as shoveling the January snow from in front of your home or office. It's 5 pm. You have just ended a full day completing brilliant financial analysis with Lotus 1-2-3, finishing chapter 23 of your memoirs with WordPerfect, and working that "one last bug" out of your Visual Basic program source. No one looks forward to staring blankly at the screen for what usually feels like an eternity while files are backed up. And besides, what are the odds that something is going to happen to those files anyway? You'll back it up next time.

This is how most computer users view backups. But without backups we are living on borrowed time — the question is not if the data will be lost, but when. Unfortunately, many computer users must learn the hard way before they think about backing up, and losing valuable data tends to be a tough lesson. Planning backup procedures now will pay in the future, and setting a regular backup schedule makes a good New Year's resolution.

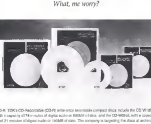
Backup Lingo

Formally, backing up is the process of copying data to a nonvolatile media in order to provide redundancy. Redundancy reduces the probability of losing data. There is some chance that the original will be lost, and some chance the copy will be lost, but the probability of losing both the original and the copy is very low.

The term backup can be used to describe both the process of backing up the system and the media that results from backup procedure. Hence, phrases such as "Please back up that report with the backup floppy." The term backup can also be given a number of qualifiers: full, incremental, differential, scheduled, unscheduled and compressed.

Full backups involve copying verbatim the original data, and are the easiest type of backup to restore, although they require the most time and storage space. Note that a full backup does not necessarily imply backing up all data on a system. For example, you can do a full backup of a specific directory tree such as c:\. Performing a full backup of the whole system is sometimes called a system backup.

Incremental backups store only changes made to the data since the last backup procedure, and hence require considerably less time and storage space to maintain. Incremental backups are not cumulative and assume a full backup exists as a base. Restoring from an incremental backup requires restoring the last full backup, and then restoring, in order, each incremental backup since the last full backup.



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Differential backups are similar to incremental backups except that all changes since the last full backup are stored (the first incremental backup after a full backup is a differential backup). The advantage of differential backups is easier restoration, at the expense of slightly larger storage requirements for each backup.

Scheduled backups are backups that occur at regular intervals, such as daily or weekly. Unscheduled backups are performed for special reasons at any time, and are usually full backups.

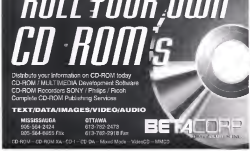
Compressed backups use data compression techniques to reduce the storage requirements for the data to be backed up. Data compression involves exploiting natural redundancies in the data so that fewer bits of information are required to store the same information content.

How Data Gets Lost

When picturing data loss, many people envision a hard disk head crash, or smoke billowing out the back of their computer. The fact is, hardware failure is one of the least common causes of lost data. While in the past, bumping your computer the wrong way could cause a serious hard drive failure, today many drives ship with five year warranties and are very reliable. (Nevertheless, it is prudent to avoid bumping or moving a spinning hard drive — Ed.) Users can expect many years of trouble-free computing from a modern, well built PC. Sometimes this increasing hardware reliability is used as an excuse for not performing backups, but there are other ways to lose data.

By far the most common cause of data loss is the Infamous Loose Nut Behind the Wheel, otherwise known as User Error. A few mistyped characters or a mouse click on "yes" when you meant "no" can spell hours of lost work or megabytes of lost data. No one is perfect, and computers have a peculiar way of pointing that out to us by following

Continued on page 32



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Back It Up

Continued from page 30

our orders to the keystroke. Fortunately most programs make an attempt to protect us from our errors so that with care many serious mistakes can be avoided.

Another common problem is power failure or sometimes just the accidental pressing of the "reset" button or kicking of the switch on the power bar. If a program is in the process of writing data to the disk when the power fails more often than not the disk will be left in a corrupt state.

Sometimes the disk does not even need to be active in order for corruption to occur. Most operating systems and some software packages use process known as diskcaching to increase performance. Data is kept in fast volatile RAM for as long as possible to minimize access to slower permanent disk storage. This often results in the deferral of writes to the disk until it is absolutely necessary. If the power fails before the caching software performs these writes corruption occurs.

Theft is also an unfortunately frequent cause of lost data. As computers become smaller they also become easier to steal. Ironically laptops have become a favorite target because of the very portability for which they are designed. Companies are also spending increasing amounts on office computers making break-ins more attractive for thieves.

As a result it is important to remember to remove the backup media from the computer at the end of each day. It is unlikely that the thief will take the time to remove the tape or floppy from the machine for you and will walk away with the backup you went through the effort to make. The very careful will remove the media from the office entirely and keep it in a safe place protecting the media from less likely events such as an office fire.

Iomega a Tape250 plugs into a computer's parallel port.

Finally, viruses are another cause of data loss. Some viruses deliberately corrupt your disk, either subtly over a long period of time or catastrophically. The surest way to exorcise a virus from your system is to wipe clean the hard disk, restore the programs from their original disks and restore the data files from the backup.

Planning Backup Procedures

At the heart of the backup philosophy is fault tolerance. Fault tolerance is the ability of a system to recover from unintentional events or errors gracefully. Backups provide recovery from a wide range of faults, at the expense of performing regular backup procedures.

Before planning backup procedures it is important to consider all the ways to make your system more fault tolerant addressing each possible way of losing data.

Maintaining a secure office and properly identifying your computer equipment can help protect against theft. There are many anti theft devices available for computers and mounting your computer to a heavy object such as a desk is enough to discourage all but the most determined thieves. Using anti virus utilities and avoiding pirated software can help protect you from most viruses.

You can protect against power failures with an Uninterruptible Power Supply (UPS). Typical UPS systems allow users enough time after a power failure to properly shut down the system, ensuring cached data is written to disk. More elaborate systems provide continuous power for many hours. For the truly paranoid, a RAID (Redundant Array of Inexpensive Disks) subsystem can virtually eliminate faults due to disk hardware.

In addition to being careful, you can protect yourself from user errors by conducting unscheduled backups. Most user errors involve either unintentionally deleting files or misconfiguring the system while installing new software or changing system settings. Before deleting files back them up. You never know when you might need them.

Before installing new software, especially software you have never seen before, do a system backup. Today's installation programs hide what they are doing as they run all over your hard disk, so you never really know what has happened to your system. And while these programs usually do a pretty good job of making the task of installing the software easier, they tend to fail miserably when it comes to undoing their actions, should you decide or need to uninstall!

Always perform system backups when you suspect there might be something wrong with your system, such as a virus or hardware problem. Also backup your system before getting your computer serviced as very few vendors will accept responsibility for data lost while servicing your computer.

Also, consider scheduled backups. Not all users need to perform scheduled backups. Users who do not use their computer on a regular basis such as a student that writes 10 papers a term can probably get by with unscheduled backups when the data is created. For regular users such as those in an office environment however scheduled backups are a must.

Whether you choose full or incremental backups and how often you back up will depend on the convenience of your backup hardware and software and the expense required to regenerate any data that you loose. Daily backup is a good rule of thumb for most businesses. In addition weekly and monthly backups can be stored on separate media in the event that the data on the daily back up media is corrupt. Some users keep

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one back up medium for each day of the week, using differential backups against weekly full backups. Weekly and monthly backups are also useful for archival purposes such as storing monthly accounting information.

The following illustrates the need for multiple backup media. Consider a virus that starts corrupting the hard disk on Monday but does not cause the system to crash until Wednesday. The daily backup floppy contains Tuesday's data, but this data is corrupt. If a weekly floppy has been kept updated every Friday, uncorrupted data is still available from the previous week's backup.

Carefully choose the files that need to be stored on a regular basis. Program files can usually be restored from the original disks or full backups performed after the software was installed, so you will probably only need to backup your data files. Most users do not actually generate much data per day (graphics and CAD users are an exception), so incremental backups can be very fast and efficient.

The most important rule is to develop a system and stick to it. Ensure that your backup system does not require lengthy user attention. Time is money, and a painfully slow backup procedure will discourages its use. Many software backup packages offer automatic backup at a scheduled time (usually outside office hours). A multitasking operating system with appropriate hardware and software can even quietly perform backups in the background throughout the day, without disturbing users.

Finally, test your backup procedures. This will ensure that your procedures actually work and confirm that you know how to correctly restore your data. An amazing number of users diligently perform backups every day without any idea of how to actually restore the data should a problem occur. Learning how to restore the system during a slow afternoon is much easier than learning under the pressure of getting a failed system operational, especially if it turns out that your backup procedures were no good.

Floppies and Tapes

For better or worse, all personal computers come with at least one floppy drive, giving all users access this form of nonvolatile removable media. Unfortunately, the speed and capacity of floppy drives has not kept pace with the rapid growth of fixed disks. A system backup of a typical 210 megabyte (MB) disk can take over eighty floppies and several hours to complete, and might be considered cruel and unusual punishment by some office personnel. Today multi-megabyte graphics and desk top publishing files are replacing the simple text documents of only a few years ago. If you have to backup with floppy disks, be sure to use compressed incremental backups and some friendly backup software.

Tape backups are more appropriate when storing large amounts of data. Tape data cartridges come in all shapes and sizes, as do the drives that write them. Your choice of tape media will depend on your budget, storage requirements, and whether you require the ability to exchange tapes with other people.

Tape subsystems consist of a tape drive and a controller. There are basically two kinds of controllers, SCSI (Small Computer System Interface) controllers, and all other controllers. This latter category consists of a myriad of adapter types, sometimes designed for a specific tape drive. Be sure that your controller and tape are compatible.

A single SCSI controller can be used to drive multiple CD ROMs, fixed disks, and tape drives. In a perfect world, all SCSI tape drives would work with all SCSI controllers, but it is still a good idea to confirm compatibility before you purchase.

Finally, some tape drives rely on the floppy or parallel controllers already in your system, plugging into your floppy cable or printer port. These systems have the advantage of avoiding the cost of their own controller, but it is usually at the expense of per

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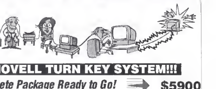

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formance. Tape drives that use the printer port are appropriate for portable computers and remote backup requirements.

The kind of tape drive you have will dictate the kind of tape media you can access. There are many kinds of tape media available, but some of the more common are 9 track, QIC (Quarter Inch Cartridge) 4mm or 8mm data cartridges and mini data cartridges (sometimes called QIC 40/80).

The 9 track format is perhaps the least common on personal computers but is still common on mainframe systems. Storing only 50 to 150MB, these are the monster reel to reel systems you see spinning away madly in government agencies, or as props in mediocre science fiction movies.

QIC tapes were first widely used on workstation platforms, and are now sometimes considered to be "standard" mainly for historical reasons. If a vendor distributes their data on tape, chances are good that they use QIC tapes because of the availability of QIC drives for many platforms and the number of existing QIC installations. QIC tapes are called DC6000, DC6150, DC6250 and DC6525 depending on their storage capacity (60 to 525MB).

Sometime called DATs, 4 and 8mm data cartridges store between 1.3 gigabytes (GB) and 5GB of data. DAT stands for Digital Audio Tape, and specifically refers to the 4mm variety. Often the term DAT is generically used to describe the method of storing data bits on the tape media. Called helical scan, it allows an amazing bit density on the tape. These tapes are also very fast, transferring up to 30MB per minute. The cost per megabyte for DATs is also very low, making them the best bang for the buck if you have serious storage requirements. However, at $1,700 for a 2.0GB 4mm drive, you will have to spend more than a few bucks to enjoy the performance.

Mini data cartridges store between 60 and 120MB of data and are the most common type of tape media used on personal computers, due to the wide availability of inexpensive drives. These drives are typically very slow (about 3 MB per minute) and noisy, but at $250 for a 120MB drive they are suitable for modest backup needs.

Some drives have data compression built into the tape hardware, improving capacity and performance. Remember, however, that you will not benefit from this compression if your data is already compressed (such as ZIP or GIF files) or if your backup software performs its own compression. When purchasing a tape drive, be sure to find out its uncompressed or worst case capacity, as many vendors like to advertise only the compressed capacity. The above figures quote only uncompressed capacities.

The big players in the tape drive business are Colorado Memory Systems, Micro Solutions, Archive, Exabyte, Wangtek, Tecmar, Sankyo, and Tandberg. Jumbo 150 and Jumbo 250 drives from Colorado are by far the most common drives seen in most computer retailers. These drives plug into the floppy controller and use mini data cartridges. Players in the tape media market include 3M, Sony and Verbatim.

Floppies may be an adequate backup medium for those that don't generate a lot of files or a lot of big files. Storage box is by CD3 Storage Systems Inc.

Other Options

Affordable optical and other high capacity removable random access devices are becoming available, and include 2.88MB floppies, WORMS, Magnetic Optical drives (MOs), flopticals, Bernoulli drives, and removable hard drives. These options are almost always more expensive than tape in terms of cost per megabyte, but provide the benefit of random access to the data.

Another common backup technique is called Network Backup. Many network servers have very high capacity disks, perhaps with a RAID system, UPS system, and anti theft devices. Copying your files over the network from your local disk to the server is an effective and convenient form of backup. Servers also often have large tape systems, allowing an efficient "communal" backup of the whole office, without disturbing any users. Network backups are also appropriate for portable laptop computers. Using LapLink or a pocket Ethernet adapter to copy files from your laptop to a trusted system is often the easiest way to backup a portable.

The recent advent of inexpensive high speed modems has prompted a novel form of network backup. Nightline backup, a division of Datasafe Communications of Vancouver, plans to offer a backup service via modem starting early in 1994. A small program residing on your computer automatically dials a central server at Datasafe during the night, performing a compressed incremental backup of your day's data. Files are hence stored off your site, so theft and fire are not a problem. Nightline also offers data encryption, so the security of your data while it resides with Datasafe is assured. Nightline remembers the state of your hard disk for each of the last 40 days, allowing extreme flexibility in restoring your data. This service will be provided for around $15/month, which is very cost effective when considering its convenience and advantages.

Backup Software

Nearly all operating systems come standard with some form of backup software. MS DOS 6 provides a simple but effective floppy backup program for both DOS and Windows called "MSBackup". If you are not doing backups now and have a limited budget, MSBackup is a good place to start. Windows/NT provides fairly impressive backup facilities, allowing automated backups to occur in the background, and supports sever

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The Raidion-LT line of fault tolerant disk arrays from Micropolis of Chatsworth CA, offer storage of up to 54 gigabytes

Sony Shows Multimedia Line

LAS VEGAS (NS) — At Comdex, Sony highlighted its broad range of multimedia products for title creation through desktop and mobile viewing Included are Sony's CD Authoring Workstation desktop and portable playback platforms high resolution Trinitron monitors and a desktop videoconferencing system based on the new PCS V2 audio/video peripheral

The CD Authoring System is a complete system for creating instructional manuals training applications and other titles in CD-ROM CD-I CD ROM XA and EBG (Electronic Book) formats Sony representatives said

The workstation is based on Sony s CDW 9000 CD Write Once drive a double-speed write once subsystem that lets multimedia developers produce prototype and premaster CD applications for low volume distribution, beta testing, or input to a mastering and replication facility

Titles can be played back on a family of CD ROM drives that includes the newly announced entry level CDU 33A, plus two other portable drives that are similar to the CDU 33A but provide a SCSI2 implementation and 256 kilobyte (kB) buffer

Desktop playback mechanisms demonstrated for the press included the Desktop Library and Multimedia CD-ROM Player The Desktop Library system incorporates a double-speed CD-ROM drive shielded Sony speakers and a 16 bit sound board

The Multimedia CD ROM Player integrates a CD ROM drive supporting the CD ROM XA standard a PC compatible microprocessor a LCD (liquid crystal display) panel and a speaker keyboard and cursor

Also in the booth at Comdex Sony is displaying a variety of new titles for the Multimedia Player including a Real Estate Multiple Listing Service demo disk additional custom titles for vertical market applications and the IBM Multimedia Studio s new Mescoe Group Business Series

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al types of backup media including tapes

Norton Backup (Symantec) and Central Point Backup (Central Point Software) are two of the most popular backup utilities for DOS and Windows Both packages provide full and incremental backups compression support for several tape drives and automatic scheduled backups all wrapped in user friendly interfaces. Choosing the best program is largely a matter of taste

In addition there are dozens of good backup software utilities available as Shareware or in the Public Domain so you might consider checking your local BBS (Bulletin Board Service) Basic backup software is also sometimes available with SCSI adapters or with your tape hardware

Arcserve (Cheyenne) is an appropriate backup package for large networked installations Arcserve has versions available for Novell Netware and various flavors of Unix serving advanced business-critical backup needs

Conclusion

As we enter the information age the data stored on our computer systems becomes increasingly valuable Business computers today store accounting and payroll information inventories fax desk top publishing, and CAD drawings all critical to the operation of business This data is often very expensive or impossible to replace eclipsing the value of the hardware on which it resides Making a small investment in computer backups will repay itself many times over when your systems fail

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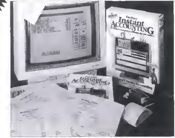

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The 10 Worst Things That Can Happen to Your Computer

and What to Do About Them

BY GRAEME BENNETT

If, as you are reading this, your computer is operating normally, and you do not have a current backup of any irreplaceable files on your computer, consider yourself lucky; then put down this magazine and go and make copies or backups of the important stuff. If you don't know how to make backups, format disks or copy files, spend a few minutes and look each one up in the user manual. You'll probably find them listed in the Index as "Backup command," "Copying files" and "Formatting a disk." Don't erase or replace any existing copies or backups you might currently have, but go and back your important stuff up right now and then create an **Emergency Startup Disk** as described below. Everything else — including reading the rest of this article — can wait.

Your **Emergency Startup Disk** should contain the following:

- A bootable disk. In other words, a disk that can start your computer in case your hard disk won't start someday — or right now. Running the SETUP program on Disk 1 of your set of MS-DOS install disks will provide an option that allows you to make one of these startup floppies.
- If you are a DOS user, you'll also want to include up-to-date copies of your CONFIG.SYS and AUTOEXEC.BAT files on this floppy disk. If you also use Windows, you should also copy the SYSTEM.INI and WIN.INI files from your Windows directory to the floppy. If you have created custom icon groups (e.g., "Main" is a standard Windows group) or installed many Windows programs, you might want to copy *.GRP to this floppy disk, too. Then, write-protect this diskette and make a label for it that says "Emergency Startup Disk." It should also list the current date, DOS and Windows versions.

Mac users should make sure they know where the System Disks — including the diskette called **Disk Tools** — that came with the Macintosh are.

Amiga owners will need a Workbench boot disk, preferably with a copy of their most recent Startup-Sequence batch file.

- If you have an anti-virus program, make sure that you have a copy of that on a write-protected floppy disk, too. Depending on the capacity of your floppy disk drive, you might need to put some utilities on a separate diskette. PC users: MS-DOS 6.2 comes with anti-virus and backup utilities for DOS and Windows.
- If you want to be really prepared, consider getting a disk utility package such as PC Tools or Norton Utilities. These packages include more advanced diagnostic and repair utilities than those provided with DOS.

Here are some common problems. I don't want to alarm you, but sooner or later, most if not all, of these problems are likely to happen to you. Don't wait until it's too late to make that backup!

1 **If your computer won't start**, there could be several reasons. Chances are good that your important files are still intact. So don't panic.

First, **check all the connections**. It sounds stupid, but I know at least one consultant who has made emergency house calls only to find a disconnected monitor cable or some other simple explanation for a "catastrophe." It might be prudent to power down, disconnect everything and reconnect it again. Is there a power light? Is it a fuse or perhaps a circuit breaker? Could an add-on card, cable or monitor be improperly installed or turned off?

Assuming that the power checks out, can you start the machine up with your **Emergency Startup Disk**? If so, can you see the files on your hard disk?

If you can see your hard drive and the files on it, but DOS won't start normally, there is no harm in re-installing DOS to get up and running again. It would be prudent to run CHKDSK to check the disk when the system is functioning again.

PC users: If your hard drive gets part of the way through its startup process and then fails, freezes or crashes, and you use MS-DOS 6.0 or newer, you can press F5 to skip over the startup files that are probably causing the problem.

Mac users running System 7 or newer can press the Shift key while starting up to accomplish the same thing.

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Amiga owners can press Control D to abort their computer's startup sequence where similar problems can occur

2 Problem: the computer will start but some or all of your data is gone (or at least seems to be) Start up with the **Emergency Startup Disk** Unless you performed the very time consuming FORMAT command (it is rather unlikely you could do this unintentionally) you probably haven't lost everything on your hard drive. What can happen, however is that the directory which keeps track of where files are kept on your computer's hard drive can sometimes become damaged or erased The best solution is to run one of the aforementioned disk diagnostic and repair utilities such as PC Tools or Norton Utilities These programs will tell you what's wrong and either fix it or advise you on what to do

If you deleted an important file accidentally the file isn't actually erased only its entry in the directory is cleared The most important thing to remember in this case is **do not write** ***anything*** **to a disk that contains deleted files you hope to recover** until after the files are recovered. Recent versions of MS DOS contain file undelete utilities, as do the aforementioned disk-utility packages

3 Problem your hard drive doesn't show up or goes away when you start or restart PC users first start up from your Emergency Startup Disk and replace the CONFIG.SYS and AUTOEXEC.BAT files from the floppy disk If after you restart, the hard drive still doesn't show up normally, look up FDISK in the MS-DOS manual and run it from your Emergency Startup disk. **Be careful** with this powerful utility FDISK's option #4 is the one you should use to determine if the computer remembers it has a hard disk Select "Display Partition" to (hopefully) view information about your hard disk. If FDISK reports that there is one or more current fixed disk drives you can breathe a sigh of relief Reinstalling DOS should fix it If that doesn't work, run **a disk diagnostic program (Norton Disk Doctor, etc.)** If no fixed disk showed up in FDISK's display it's probably a hardware problem Let an expert have a go at it before declaring it OPD An inexpensive cable is often the culprit

Mysterious hard drive behavior can be caused by electrical problems including dead batteries on-board your PC (if your computer is over three years old this is a distinct possibility) or a defective power supply in your computer hard drive mechanism malfunctions or a defective ribbon cable between the computer and the hard drive

It is also possible that you have simply set an incorrect configuration option in the battery backed parameters controlled by the computer's BIOS — basic input/output system Your dealer should be able to correct many configuration problems

4 Problem you encounter a **fatal disk error** (usually while working on an important file!) This is not so good Try saving to a different disk with a different name The most important thing to remember is **do not replace your only good copy** of a file (or your only good set of backup disks) with a version that you suspect may be damaged

Some diagnostic and disk repair programs can recover damaged files but don't count on them Hopefully you have a backup of all your important files **Save often** and keep more than one copy Keep disks cool dry and away from magnets motors buzzers speakers and other magnetic fields.

5 You have reason to suspect a virus attack? Strange funny or rude "hacker" messages or computer behavior while using your computer may indicate a virus on your system The safest course of action is to immediately **obtain a current version of a good anti virus program** and check your system (MS DOS 6 2 comes with reasonably good antivirus programs for DOS and Windows.) If it is not a virus contact the company that produced the program you were running and ask them about the message To prevent against virus attacks **keep your Emergency Startup Disk and your virus-checker disks write-protected**

6 PC users **Windows won't run?** The first thing you should do is **restore the CONFIG.SYS and AUTOEXEC.BAT files** from your Emergency Startup Disk and then restart. If after you've restarted and tried typing WIN it still doesn't work the way it used to try restoring the WIN.INI and SYSTEM.INI files and try again If that fails, reinstall Windows If that fails see the other options listed above

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7 Your applications won't print or operate normally? As in the previous example, **restore preference and/or user files from a backup**. Check your application's preferences option, if there is one. Make sure the correct options are selected (printer, network, display, etc.). If all else fails, **re-install the software from the original disks**. If you've changed or added anything to your system (power down in the case of hardware!), remove it and restart to see if the problem goes away.

Most IBM compatible computers have expansion slots that conform to a standard called ISA (industry standard architecture). Add-ons such as sound cards, graphics adapters, network cards, etc. that connect to the ISA "bus" often don't work right unless all the cards are properly configured to use different memory addresses and IRQs (interrupt requests). In practical terms, this usually means spending hours poring over technical documentation and fiddling around inside your PC, adjusting switches, jumpers, and whatnot. Needless to say, this can create all sorts of problems for beginners (and experts alike!). Either purchase a PC pre-configured with all the goodies you want, or get a computer that doesn't have this problem. (IBM PS/2, Macintosh, Amiga and PCI-bus computers all support autoconfiguring cards that are as simple as "plug and play.")

Speaking of removing things: before removing software, it is wise to check the manual to see if there is a "Remove" or "Uninstall" option. Many programs, especially Windows applications, add special items to one or more of your system files. Manually deleting the files and/or directories can often lead to trouble or complications. Use the **Install/Uninstall or Update options** provided by your applications whenever possible to retain system settings and user preferences.

All software companies have technical support departments to help you solve these problems. They will need to know the type of computer, hard disk, how much memory, what version of DOS you have, etc. It's a good idea to write these down — perhaps on the label of your Emergency Startup Disk. If you don't know the answers, **read the manuals first**. Then, ask your dealer or call tech support. If the problem you are having is repeatable, they have probably heard about it before.

Most technical support experts rely on a scientific method of isolating problems. Change one variable at a time and isolate the exact cause of a problem. If you have a large number of variables, you can speed up the process by disconnecting or disabling half of them at a time.

8 Experiencing mysterious crashes? Usually, this is caused by a conflict between some program or utility you've recently installed and some other aspect of the system. On the PC, device drivers and other programs that start up automatically are typically loaded by the CONFIG.SYS and AUTOEXEC.BAT files. You can rename these files to some other name —

```
REN CONFIG.SYS CONFIG.OFF
REN AUTOEXEC.BAT AUTOEXEC.OFF
```

— and see if the problem goes away. If so, restore the files from your Emergency Startup Disk. You might want to load the two versions of each of the files into a text editor to see if you can figure out the line that is causing the problem.

9 Your computer and/or software was stolen or destroyed?! Ouch. Hope you were backed up and had insurance. You *do* keep the backups somewhere separate from the computer, don't you?

Continued on page 40

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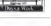

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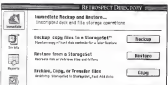
Retrospect & Retrospect Remote Job-saving Software

BY RON GRANT



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Product: Retrospect & Retrospect Remote Version 2.0
Dantz Development Corporation 1400 Shattuck Avenue, Berkeley, CA 94706 USA (510) 849-0293
Requirements: Macintosh Plus or later running System 6.0.5 through 7.1 with 4MB of RAM or greater depending on the number of files to backup (System 6 users can run Retrospect with a minimum of 2MB)
Suggested Retail Price: Retrospect C$299 with 10 Remote Users $539

The Usual Admonition

A million reviewers at a million typewriters will agree on only one thing: most people don't back up often enough, it's too tedious, and the potential for lost data and lost income is too great to trust mere humans anyway. Get help.

If your data will fit onto a few floppies, backing it up is painless. As the computer becomes more important to your work, your data starts to react like a gas – it expands to fill the volume allotted to it and tends to leak out into a void.

Backup Software ranges from the simple add-ons found in utility packages to comprehensive scriptable client-server systems designed to safeguard a large workgroup.

By all accounts, the reigning champion for the Macintosh is Retrospect & Retrospect Remote. Retrospect itself is a powerful (though complex) solution for the single user, while Retrospect Remote is simply a Control Panel that's installed on other computers networked to the central Backup Macintosh (Dantz' term for the Mac you run Retrospect on).

Drag and Drop Installation

Installing Retrospect is ridiculously easy — drag the application and system files into the appropriate places on your Mac's hard disk. For a network, install Retrospect on one machine and the Remote Control Panel on all other computers. Dantz' copy-protection leans toward making it easy for the network manager — Remote is freely distributable, but is activated from the Backup Mac.

I have found Retrospect to be compatible with everything I have used it with, includ

Continued on page 42

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10 Worst Things

Continued from page 38

10 Your computer/network/printer etc. broke down or went up in smoke? Unfortunately, if this has already happened, there's not much point in telling you to never plug in or unplug anything connected to your computer with the power turned on. Computers are sensitive to static electricity, power surges and power failures, too, not to mention spilled cups of coffee. If the unit suffers a catastophic hardware failure, you will probably have to have the motherboard or main circuit board replaced — although, if you are extremely lucky, it may only require a new fuse. If you spill liquid into your computer or keyboard, turn the power off before attempting to mop it up. Dust, dirt and smoke will cause sticky keys, disk errors and other long term problems.

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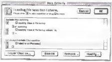
Retrospect

Continued from page 40



Select backup files by any means imaginable

ing System 7 Pro. I have recommended and installed several Retrospect networks with only one problem: modal dialogs on the Backup Mac will delay the scheduled Retrospect sessions. Modals are a type of window that can't be switched to the background, such as Appleshare's messages telling you that a file server has shut down.

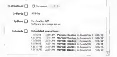
The system is easy to set up and run, but the manual does its best to convince you otherwise. Someone must have concluded that if graphics and bold headers convey information better, then a profusion of them must really get the idea across.

So leap into the program with your mouse in one hand, manual in the other — the worst that can happen is that something might accidentally get backed up.

Understand the Terms, Understand the Program

Aside from the excessively "desktop-published" manual, the only problem I had with the program was the terminology. I was initially boggled by StorageSets, SnapShots, Selectors, Members, Catalogs, and other terms too similar in meaning. It makes sense to me now though, and I doubt that I could come up with a better naming scheme given the nature of the program. You'll be grateful for the excellent glossary they supply.

The program itself presents one main



A simple script that daily backs up all files on the disk Documents incrementally to a file

Directory, with live icons for the major features — Immediate, Scripts, Reports, Configure and Tools. These are designed to keep the dialog-digging to a minimum.

Backup is the prime purpose of Retrospect and you can do so either manually (in the immediate mode) or automatically (via a Script). You can also create manually activated scripts within Retrospect, or save them as a Run Document. Naturally, backups would be useless without Restore capabilities, but one accomplishes this only in the Immediate mode. One should hope that you will not need to restore files often enough to automate it.

If not interfered with, the program works flawlessly. Problems arise when other network activities cause something to go awry, for example, crashed Macs, network failure or even stuck Microsoft Word temp files. Retrospect seems to skip over most problems though, and continue with the rest of the backup, reporting quite clearly what went wrong where and when.

The only suggestion for improvement I could make to Dantz would be that a network manager needs to keep tabs on things, so having the Log file E-mailed to her or him would be a blessing.

Performance is good; one test network completes a nightly Full backup of 1 Gigabyte of data in less than four hours over Ethernet, while another completes an incremental (i.e., only the data that has changed) backup of 10 users in 30 minutes. Naturally, LocalTalk is proportionally slower (though still faster than Finder copying). The type of backup you choose depends on your storage capacity, amount of time, and media throughput.

One of Retrospect's strengths is its customizable scripts. Through a master dialog for each script you can choose a nearly unlimited variety of criteria for the backup.

One limitation: you can't combine more than one type of backup in one script, i.e. you cannot do a Full backup of your accounting data while doing an incremental backup of your other data. Some accounting and database applications do not change the modification date of their own data file, leading Retrospect to believe that the file hasn't changed and therefore doesn't need backing up. Fortunately, a StorageSet can contain the results of more than one script (thanks to Dantz' excellent tech support department for that tip), so constructive use of sequential scripts will yield a backup that's perfectly tailored for you.

Conclusion

It's hard to imagine anyone needing backup software with more or better features. If the time it would take to recreate your data is worth more than the cost of the program, then I can highly recommend Retrospect. For networks, Remote is definitely worth every dollar spent even if it's used only once in the first year by someone in your company.

Ron Grant is "the Computer Guy" for many small and medium businesses in the Vancouver area. Contact him at GXR Systems (604) 433-3001

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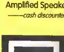

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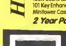

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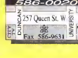

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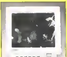

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SHOW OVERVIEW

Innovative Products At Canadian Computer Show

BY KEITH SCHENGILI-ROBERTS

Toshiba's portables had a suitable venue

While not as large as it has been in previous years, the 24th Annual Canadian Computer Show and Conference remains one of the leading computer shows in Canada. Held at the International Centre in Mississauga Ont Nov 21-24 1993 the four-day show was expected to attract more than 30,000 people. There was nothing truly ground breaking at the show this year but there were a lot of interesting and innovative products being presented.

Canon's Still Video Camera

Canon had an interesting display showing off its still video camera by taking pictures of people at the show, and then displaying them on its computer monitors.

The camera allows you to save up to 25 video images on a single disk. The camera is the size and weight of a regular 35mm camera and has recording, playback and erase features built in. It can also function as a color scanner and take images directly from a VCR. It comes with a zoom lens and an infrared focusing system.

The camera is not cheap at the suggested retail price of $5,000 but the clarity of the images and its ease-of use are indications that the days of regular film photography may be coming to an end.

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Now there is another option. All Computers Inc. offers a special plug in 486 chip that will fit into the old 286 microchip socket. All you have to do is remove the 286 chip and replace it with a small device which contains either a 486SLC 25MHz 33MHz or 50MHz chip. It will never be as fast as a 486 computer as it does not have a motherboard designed to efficiently handle the data going to and from the 486 microchip but for many users it will be a much cheaper way to upgrade their tired old PCs. The 25MHz version is available for $349 the 33MHz for $389 and the 50MHz for $499. 386SX computer users will be interested in knowing that All Computers has similar plans underway to replace 386SX chips with 486s using a similar system which will piggyback over the existing 386SX chip.

Contact: All Computers Inc (416) 960-0111

Norton Desktop for Windows v.3.0

Symantec was showing off several new products at the show and one of the more popular programs it demonstrated was the revamped Norton Desktop for Windows v 3.0. Essentially a replacement for Windows' over cluttered Program Manager it will make running most programs a single mouse-click away. It also comes with over 30 tools and utilities to help you get through Windows.

There are many new features in this version including FileAssist which lets you do file management without leaving the application you're running and supports extended file names and history lists. A ScriptMaker utility lets you automate and control features on your desktop. Rescue Disk allows you to boot up DOS if you can't boot from your hard drive and you can use Speed Disk to optimize your hard drive's performance within Windows. Norton Desktop's new online tutorial will help you with any of its other features.

It will run on any basic Windows PC and requires 15MB of hard disc space. Copies of Norton Desktop for Windows v 3.0 will be available for $179 U.S. or as an upgrade version to registered users for $59 Cdn.

Contact: Symantec Canada 1 800-867-8686

Toshiba's T3400 Subnotebook

One of the most impressive products on display at the show was Toshiba's new T3400 subnotebook computer. They are tiny little machines at 8" x 10" x 2" and weigh just over 4lbs including the battery. The T3400 models use Intel's SL Enhanced 486SX CPU running at 33MHz and come standard with a 120MB hard drive, 4MB of RAM and include a PCMCIA Type II slot allowing the user to plug in additional features. The design borrows heavily from other manufacturers' products, like IBM's ThinkPad which uses a strain gauge mounted within its keyboard to guide the cursor on screen and Apple's new notebooks which have an ergonomic palm rest in front of the keyboard. They use rechargeable lithium ion batteries that have a rated battery life of 4-8 hours.

This is a powerful little machine that is bound to do well. The monochrome version is available at a suggested retail price of C$3 900 and the active matrix color display version for $5,900.

Contact: Toshiba of Canada Limited (905) 470-3478

Microsoft Dinosaurs

Microsoft didn't have a booth at the show this year. It had a separate multimedia presentation theatre instead where it showed off some of its most recent releases. One of the presentations I caught was a demo of Microsoft Dinosaurs an educational CD ROM aimed at school-aged children.

It is one of the best educational multimedia programs I've seen. It has over 1,000 color illustrations and photographs, ambient dino sounds, audio tour guides and roughly 200 articles.

You will never have to worry about mispronouncing dinosaur names as you only have to click on a megaphone icon beside each multisyllabic dinosaur name (like "Plantnitzkysaurus") and it will be pronounced for you. There are six video sequences taken from the acclaimed PBS series "The Dinosaurs" that come with full

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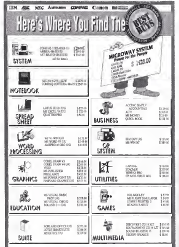

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MS WORD V6 T/U $[illegible]
AMIPRO w/ OBO U/G $[illegible]

OP SYSTEM
IBM OS/2 U/G $[illegible]
MS WIN NT $[illegible]

GRAPHICS
COREL DRAW V3 $[illegible]
COREL DRAW V4 U/G $[illegible]
VISIO $[illegible]
MS PUBLISHER $[illegible]
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audio. Using a full range of graphics, sound and video Microsoft Dinosaurs produces a thoroughly enjoyable experience while sneaking some education in at the same time. If you have a child interested in dinosaurs and you have a multimedia ready PC you can't go wrong by getting a copy of Microsoft Dinosaurs. Suggested retail price is $99.95

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The Canadian Computer Show and Conference was an impressive show though it is obviously suffering from some of the competition of other Trade Shows being held in Toronto these days particularly Comdex Canada. Expect the Canadian Computer Show and Conference to return to Mississauga again next year celebrating its quarter century anniversary ■

CANADIAN COMPUTER SHOW

A PDA Perspective

BY GRANT BUCKLER

TORONTO (NB) — Personal digital assistants (PDAs) still have maturing to do, but they will be important products in the next few years visitors to the Canadian Computer Show and Conference here in Toronto were told.

Craig Hustadt former general manager of marketing and planning for Sharp Electronics of Canada, said that PDAs have been getting a rough ride in the press. He admitted however there is a reason for that. Manufacturers he said, "have a very big and ugly habit and that is to over-promise and under-deliver."

"And if they would only learn to under-promise and over-deliver I think the press would probably be kinder to them" he added.

Hustadt said that there are some problems with today's PDAs partly because today's technology simply can't deliver everything buyers would like in a package as small as they want at a price they want to pay.

He questioned the complaint that PDAs are overpriced asking rhetorically where else one would find all the capabilities of a PDA for less than $1 000.

On the other hand, he agreed with another common criticism, that the handwriting recognition technology available today is not good enough. While PDAs may achieve from 65 to 95 percent accuracy in translating handwriting Hustadt said optical character recognition typically delivers better than 99 percent — and that still means that on a page with 2,000 characters there will typically be about 20 errors.

"PDA devices require assistance from software houses" Hustadt said explaining that software developers need to write applications that can use the context in which data is entered to make intelligent guesses about what entries are likely to be thus making up for the deficiencies of today's handwriting recognition.

Another problem facing the infant market he said is the proliferation of pen based operating systems. "What we need is a winner" Hustadt said because application developers lack the resources to write to the myriad platforms now on the market.

Commenting on the various PDAs now on the market Hustadt had most praise for the Zoomer being marketed by Tandy and Casio, saying that it was "designed with the customer in mind."

He said that Sharp's recently launched PT 9000 is powerful but may have to wait for customer acceptance due to its size, which is larger than that of many PDAs.

Comdex Killing CCS?

BY GRANT BUCRLER

TORONTO (NB) — The 24-year-old Canadian Computer Show, which grew throughout the 1980s until it strained the capacity of the International Center of Commerce in Toronto, has fallen back to occupy no more floor space than it did at the beginning of the 1980s.

While show organizers play down the impact of new competition from US-based trade show operator The Interface Group they admit the debut of Comdex/Canada this past summer has hurt the older show. Others are blunter, saying aggressive competition from Comdex/Canada has crippled the Canadian Computer Show and may yet kill it.

The show floor plan this year shows booths for about 250 exhibitors. Last year there were about 300.

The show is "not what it used to be" said one computer company executive.

Several prominent companies were missing from the show floor. Apple Canada Inc., was not present nor was Digital Equipment of Canada Ltd. Hewlett-Packard (Canada) Ltd., did not exhibit nor did Sun Microsystems of Canada Ltd., nor Lotus Development Canada Ltd. However, IBM Canada Ltd., Microsoft Canada Ltd. Borland Canada Software Inc., Computer Associates Canada Ltd., and WordPerfect Corp. were all on the exhibitors' list.

The Interface Group held a reception for potential exhibitors at a nearby hotel on the Canadian Computer Show's opening day, where it announced an expansion of the 1994 Comdex/Canada and said it will launch regional Comdex shows in Vancouver in 1994 and in Montreal in 1995 ■

DOS SHELL

Latest Norton Commander Offers Easy-to-use Power

BY KEITH SCHENGILI-ROBERTS

Title: Norton Commander version 4.0 for DOS
Manufacturer: Symantec Canada
Price: $99 Cdn $49 for upgrade to registered users

For those who don't like the DOS-shell that is provided with the DOS program Norton Commander may be the alternative you are looking for. The new version makes DOS much easier to-use while providing powerful tools and utilities wrapped up in an intuitive interface.

Before Windows became the de facto computing standard, people had little choice but to use DOS. The aim of Norton Commander was to provide a better DOS interface using a point-and shoot approach to file management. This is a program which has always had a large following in Canada and Europe (for some reason it never really caught on in the U.S.) and is the DOS-shell of choice for many users.

In Norton Commander, a split screen display shows the contents of two separate drives or directories and a user is able to move, erase or copy files to a different directory or drive. Word processor files, databases, spreadsheets and executable files can also be viewed quickly from within the program so users do not have to head to a specific application just to view the contents of a file. It also comes with a simple ASCII editor. You won't want to get rid of your favorite word-processor, but Norton Commander is ideal for editing small ASCII files such as your autoexec.bat or config.sys files. Users can also list a directory's contents in alphabetical order, by time, file size or extension. You can also automatically rename directories and with a new function of this version, you can delete whole directories filled with files in a few key strokes. If you feel you have typed in a few too many "dir" or "copy *.*" commands you will immediately appreciate the advantages of the point-and-shoot approach of this program.

The single most important addition to Norton Commander 4.0 is its ability to handle compressed files. You can now compress single files or a group of files by selecting them on-screen and then employing the compress feature. Decompressing files is just as easy. The new version of Norton Commander views compressed files as the equivalent to directories so you can go "inside" the compressed file and view its contents and then selectively decompress and/or move files from within the compressed file. The new Norton Commander also allows you to specify the default compression parameters and has built-in support for PKZIP version 2.04X — the most recent version of the popular compression program. It also supports the ARJ, ARC, PAK, ZOO and LHARC archive formats. If you regularly deal with a lot of compressed files, this feature alone is worth the cost of the program.

The program is now able to view graphics files in many formats including Windows wallpaper (BMP) files, GIF, TIFF and ICO graphic files although the colors it displays are not always true to the original image. As a Terminate Stay Resident (TSR) program, it eats up precious RAM so it may not be suitable for users with very scarce memory resources.

The new Norton Commander is a respectable addition to a venerable line of programs bearing the name. It is well worth the price of an upgrade for current users and is ideal for those just being introduced to DOS based computing. It is available for $99 Cdn or $49 Cdn for an upgrade version. ■

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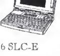

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HARDWARE REVIEW

Fujitsu 3.5-inch Magneto-Optical Drive

BY JOHN MCCORMICK

This removable, rewritable optical drive offers unlimited archival and online storage at a reasonable price.

Runs on:	Macintosh or PC under Unix, MS DOS Windows, or System 7
From.	Fujitsu Computer Products of America, 2904 Orchard Parkway San Jose CA 95134 In Canada: Fujitsu Canada Inc 2800 Matheson Blvd Mississauga Ont L4W 4X5
Price:	US$1,000 street price as delivered with four blank discs Fujitsu Canada suggested list prices range from $1 325 to $1,825

Pcma Rating 4 on a scale 1-lowest to 4-highest

Running out of hard disk space? Sure we all are The first hard lesson learned by anyone new to personal computers is that no hard disk is ever large enough to hold everything that users find a need to have online.

Floppy diskettes are not the solution, nor are tape drives nor even the well-known Bernoulli and other brands of disk drives with their removable magnetic disks — the only real solution currently available is optical because of its high storage density and very rugged design

But the large business grade 600 megabyte to 1 2 gigabyte magneto optical drives are priced in the US$3 000 range out of the question for home or small business users who often have less than that invested in their computer and laser printer together

WORM or write once drives are less expensive but for many users their inability to rewrite data on the same disc makes the medium cost too high

M-O drives, on the other hand, are highly reliable and, unless subjected to vigorous physical abuse the removable disc itself comes as close to permanent storage as most users need.

The particular drive reviewed has been operating in the Newsbytes Washington Bureau for about four months and, as originally expected the 128 MB data limit has posed no problem because although gigabytes of data and programs are accessed in this office, no single research task requires more than about 100 MB of archival data to be online except for the massive databases which are already stored on CD ROMs

The relatively inexpensive M-O drive is perfect for many businesses both as a way to backup data and as an inexpensive way to move data around between offices Even multimedia productions which are notorious for requiring vast amounts of storage can use relatively small chunks of images and sounds stored on these 3.5-inch discs

Break even costs for this drive, compared to purchasing a sealed hard drive comes at about 2 gigabytes (GB) of storage capacity but this is not an easy to determine point for many users because removable storage is slower and sometimes less convenient than a massive internal hard drive

On the other hand, the removable media is far more durable For instance backups can be removed and stored off site and if the drive mechanism fails the data is not endangered

Because they offer different advantages, intensive data users would generally want both a hard drive and an M-O drive

The removable discs cost $40 each but the $1 000 street price paid for our external unit included about 500 MB of discs so even the starter package provided archival removable storage at a price of about $2 per megabyte only about double the cost of more vulnerable hard drives and of course, it actually has an unlimited capacity Counting the drive and media costs storing 3 GB of data only costs about 60 cents per megabyte

These M O drives are SCSI 2 based and either come with a SCSI board that can daisy chain CD-ROM or other devices or can be connected directly to computers such as Macintosh systems which come with a SCSI port built in.

The disc comes low-level formatted and only needs about 20 seconds processing to be ready to accept data and the disc can also be used to boot the system so this provides an easy way to access different operating systems on the same system

Average access time for the Fujitsu drive is 30 milliseconds (ms) compared to the average hard drive which is about twice as fast The external drive (internal mount version is also available) is quite small measuring only about 1 5-inches high by 5-inches wide by 8-inches deep The M-O media is hard cased much like a 3 5-inch floppy diskette, and only a bit larger

Installation including the internal Trantor Systems SCSI board, was very easy and the system has performed flawlessly since installation

Because support is a very important part of any purchase of such exotic equipment, I want to point out that Insight/Hard Drives International, the mail-order hard drive supplier where our system was purchased was extremely helpful both in helping to select the proper drive to meet this bureau s needs and in clearing up a minor confusion that resulted in the drive arriving without the SCSI 2 adapter The correct hardware arrived less than 24 hours after we discussed the problem - and at no charge!

M O drives are not for everyone but anyone dealing with relatively large amounts of

Continued on page 52

PC HARDWARE

Hurricane Feeds The Need For Speed

BY DAVID TANAKA

Product	Hurricane 486DX-80
From	AC Systems 19 Ames Circle Don Mills Ont M3B 3B9 Tel 416-449-0311

If you've got the need for speed, AC Systems of Don Mills Ont has a 20 percent solution

AC's Hurricane series of 486-powered VESA local-bus PCs operate at 80 MHz. That according to the company translates into a more than 20 percent performance boost when compared to a comparably configured 486-66

To back up its claim AC Systems offers the results of two common speed tests. Landmark 2 0 and PC-Tools CPU benchmark Performance at 80 MHz, when compared to 66 MHz, showed increases of approximately 20 percent on these tests.

How's it done? AC Systems says it has used CMOS technology to increase the external speed of the Intel 486DX2-66 chip from 33 MHz to 40 MHz. The clock-doubling feature of the DX2 chip then boosts the internal speed to 80 MHz An active cooling device — kind of an electronic fridge — is mounted on the CPU to keep it from frying itself

The motherboard is manufactured in the United States and carries a five-year limited warranty It uses an AMI BIOS and Symphony chipset and includes a Pentium upgrade socket.

The demonstration model that the company shipped to *The Computer Paper* was stuffed with 16MB of RAM a VESA local bus graphics accelerator card called the Torpedo P-9000 212 MB and 245MB hard drives and an Ethernet card

The machine was loaded with a dual boot feature that allowed booting to DOS/Windows or Windows NT and each operating system had a hard drive to itself

The Torpedo graphics card incorporates the Weitek P-9000 chip, and comes with 2MB of VRAM and 1MB of DRAM It will display true color (24-bit 16.7 million colors) at VGA and SVGA resolutions non interlaced It will also support up to 65 000 colors at 1024 x 768, and 256 colors at 1600 x 1280 or 1280 x 1024 non-interlaced according to the company Drivers for a variety of software titles including AutoCAD and Windows 3 1 (but not Windows NT at this time) are part of the package

Some informal time trials using a hand held stopwatch revealed pretty impressive performance I conducted two simple tests on three machines an ISA-bus 386DX with 8MB of RAM an EISA-bus 486DX2-40 with 8MB of RAM and the Hurricane One test involved copying a 61 object CorelDraw! file (348K) to the Windows Clipboard The other was to import a 160 000 word WordPerfect 5 1 for Windows file (1Mb) into Word for Windows 2 0.

The following table gives the results.

	Copy CDR File	Import WP Doc
386DX-33	7 min 30 sec	2 min 30 sec
486DX-40	2 min 30 sec	1 min 10 sec
486DX-80	1 minute 5 sec	30 sec

It must be pointed out that these tests were not rigorous and no attempt was made to match the systems — the machines were used as found in their everyday work environments But if nothing else the stopwatch shows that the Hurricane is no slouch.

The Weitek-based graphics card provided some sparkling screen refresh times and changes made to CorelDraw! images were redrawn almost instantly on the screen

The card needs a high performance monitor to show its stuff but will support standard VGA modes A 14-inch Darius non interlaced monitor would only work if we used a standard Windows driver However the 17 inch CTX 1760 that we hooked up worked with the high performance drivers with no problems.

With a system like the Hurricane you probably wouldn't be happy with a run-of the-mill 14-inch desktop monitor anyway AC Systems is aiming the Hurricane at CAD and desktop graphics power users.

A basic Hurricane system includes 256K of cache memory 4MB of RAM 245MB hard drive 3.5 inch floppy, Western Digital VESA local bus graphics card 15-inch monitor and Honeywell keyboard and mouse Suggested retail price is C$2995 The Torpedo P 9000 graphics accelerator card costs C$795.

Other options include an SCSI 2 controller hard drives up to 2 9 gigabytes and up to 128MB of RAM ■

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Did You Know?
OS/2 is a next generation operating system. It is designed to take advantage of 386 class PCs or higher as opposed to DOS which was designed 15 years ago for 8088 class PCs. The differences are dramatic and unappreciated by most PC users. Even dedicated DOS users (not Windows) can benefit greatly by installing a stripped down version of OS/2 and be able to take advantage of multiple concurrent DOS sessions, each with their own config. sys etc. In this stripped down configuration It will run very well on 4Mb ram. A full installation including multimedia add-ons requires 6Mb and recommended 16Mb ram

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• WINTER SPECIALS! •

Windows 3.11 Closer To 32-Bits

BY DAVID TANAKA

Product. Windows For Workgroups Version 3 11
Vendor Microsoft Canada Inc.
Pricing: $279 or $259 until Feb 28, 1994 upgrade from Win 3 1 or Win for Workgroups 3 1 is $94 95 (all prices suggested retail)

The roll-out may have been quiet by Microsoft standards but Windows For Workgroups (WFW) 3 11 has arrived The modest numerical increment belies some significant enhancements in this latest version of Windows

While the name implies WFW 3 11 will be of interest only to networked Windows users it offers advantages over both Windows 3 1 and Windows For Workgroups 3 1 The bottom line simply is that WFW 3 11 works faster than any previous version. For users — networked or not — with hardware that can take advantage of the new 32-bit drivers the $100 upgrade price buys a 25 percent faster computer

Windows DOS underpinnings ultimately limit its advancement but WFW 3 11 has taken a few important steps towards the modern world of 32 bitness Most significant are new 32-bit networking, hard drive caching and file allocation virtual drivers that work from within the Windows environment These were lifted out of Windows NT and give Windows a snappier more responsive feel

The 32-bit VCache disk caching driver is faster and smarter than the DOS based SmartDrive says Bernard Wong Microsoft Canada s product manager for Windows for Workgroups While SmartDrive reads ahead on physically contiguous sectors of the hard drive, VCache goes one better by caching the sector that holds the next portion of the active file This dramatically boosts the hit rate of the cache The company has also included a 32-bit file allocation scheme called VFAT

Windows no longer has to to drop down to DOS to access the FAT (file allocation table)," says Wong, because WFW can now use the 32 bit VCache which performs the same function but within Windows

Wong claims these two drivers make disk reads and writes with WFW 3 11 up to 50 percent faster than with Windows 3 1 He adds that over all performance of 3 11 in the real world is about 25 percent faster

Based on casual tests conducted at *The Computer Paper* a 10-20 percent performance gain is a reasonable expectation Conducting the same operations without, then with the 32-bit drivers enabled we found that seconds were shaved off routine tasks like opening applications and saving files

The network drivers are now 32-bit and handled from within Windows itself says Wong who adds that only about 5K of conventional memory are needed for DOS to handle its portion of network duty

Version 3 11 is both NDIS and ODI compliant whereas 3 1 was NDIS-compliant only Therefore applications that are ODI compliant should work.

However we couldn t get WFW to work with our Farallon Timbuktu for Windows software that connects one of our PCs to the Macintosh network A possible solution seems to lie with installing a new IPX driver, but we hadn't begun to track one down at press time We therefore offer no comments on the revised network services of WFW 3 11

The first expression of the company's "Microsoft at Work" strategy appears in WFW 3.11 in the form of Microsoft at Work Fax a fax application that operates as a Mail service For single users the fax software works in the same way as do products like Delrina s Winfax it installs as a printer driver and a document is faxed by "printing" with that driver selected

Wong says WFW 3 11 is an intermediate step toward the company s jewel of the future Windows 4 (code-named Chicago) which is supposed to be ready by mid-1994 Win4 will be all 32-bit and a true operating system unto itself In other words DOS won t be needed for Win4 to run. ■

Contact Microsoft Canada, 1-800-563-9048

BOOK REVIEW

New Optical Storage Technology

BY LINDA ROHRBOUGH

Author John A McCormick.
Publisher: Irwin Professional Publishing, 1333 Burr Ridge Parkway Burr Ridge Illinois 60521 800-634-3961 ISBN 1 55623-807 6
Price: US$30 00

New Optical Storage Technology is a good resource book for those interested in distributing vast amounts of information via optical storage

The most interesting thing about John McCormick s new version of *Optical Storage Technology* is the benefit the reader gains of John s thorough understanding of both analog and digital storage technology The book itself is aimed at companies interested in taking advantage of the storage advantages of compact disc read-only memory (CD-ROM) and users who are looking for the types of CD ROM titles available in the marketplace

Using metaphors that anyone can understand John does an excellent job of explaining how analog technology is different from digital and the situations in which one is more desirable than the other He also thoroughly covers the different formats in which digital storage technology comes including optical tape John spends the majority of his time on CD-ROM and Compact Disc Interactive (CD I) technologies

Half of the book s approximate 350 pages is devoted to information on optical technology The remainder is divided into 15 appendixes of resource material on titles in various optical media and resources for both hardware and manufacturing of optical storage media These resources would be especially useful to someone who wanted to investigate publishing a CD-ROM title

The only criticism I have of the book is it could have been better organized The introduction isn t an introduction that lets you know what to expect but is instead a short overview of the types of optical media The problem with being hit with the amount of detail offered in the introduction is it sets a precedent that the rest of the book is going to be that way and could discourage potential readers from going any further

I would advise readers to skip to Chapter 1, read up through Chapter 2 then go back and read the Introduction If readers can hang on through the first few chapters, however they will be richly rewarded

As a reference book for those interested in CD ROM publishing, it s definitely an excellent resource that would be turned to again and again John offers excellent explanations and has done his homework researching publishing via optical technology As a resource book and guide to CD-ROM publishing, *Optical Storage Technology* is excellent.

The publisher has a toll free number and takes credit card orders and only charges about $3 50 for shipping and handling on a single book The book is retail priced at $30 00 ■

Fujitsu M-O Drive

Continued from page 50

data or large numbers of programs that can easily be segregated into about 100-megabyte chunks will find that these drives are not only highly cost-effective but may even be easier to use than gigantic hard drives because there is far less data to search through and you can easily archive less-often used data, while keeping it available with only a few second s delay

Puma Rating

Performance 4 At 30 milliseconds it is a bit slow for today's users but certainly fast enough for most users who will keep programs on 12 ms. hard drives while using the M O for data storage

Usefulness. 4 Puts an unlimited amount of online data on the desktop and also provides archival and backup storage

Manual 4 Very short, but entirely sufficient.

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Q&A

BY GRAEME BENNETT

Hackers And 'phone phreakers' Software Upgrades

Q: At our office, we have a new modem number. A few times already, we have had "suspected" modem calls on our line which used to be for our modem and now is a regular phone line. We suspect them to be modem calls because a few times we had calls on this line with no one on the line when we picked up the receiver. One of my co-workers seems to think that there could be a possibility that a hacker is trying to hook up to our modem. Is there any way to protect our modem line from intruders?

A: The best plan of defense is to take a multi-tiered strategy. Hackers and "phone phreakers" are notoriously persistent.

1) Don't publish the number anywhere. Keep it a closely guarded secret.
2) Do not allow remote users to set up their computers to automatically dial in and log onto a system with a "script" if it contains sensitive data. If their remote PC gets stolen or the software is surreptitiously copied (an illegal but common activity in many offices) there goes the security. Ensure that users always type passwords manually.
3) Speaking of passwords, for heaven's sake don't use easy ones such as your initials or anything that could be guessed by a hacker. A good choice is a string of several characters consisting of a combination of upper- and lower-case characters including both letters and numbers. A system administrator should also see that all users change their passwords, the more frequently the better. Even with all these precautions, it is prudent to expect (and prepare for) the worst. BBS and remote-access software sometimes has a "back door" — a secret entrance that may be known to — or stumbled upon by — hackers.

Q: We have several computers and are finding it difficult to keep up to date with software revisions, DOS versions, utilities, etc. What is the best solution?

A: Consider establishing a standard suite of software for all machines. If your office(s) have different tasks — for example an accounting department and a production area, each department might contain a different subset of this software. Typically, you will need the following:

- Standard system software. Choose a reasonably recent version. For most PC-based offices, MS-DOS 6.2 is a good choice. MS-DOS 5.0 would be another reasonable choice.
- Windows 3.1 or Windows for Workgroups 3.11.
- Your application software, say a word processor, accounting program or a spreadsheet.
- additionally, you should strongly consider purchasing copies of a disk utility package such as Norton Utilities or PC Tools. These packages provide regular maintenance and emergency tools and should be on hand in every office.

Many offices employ a "system administrator" to set up and maintain the computers. These people sometimes remove software "extras" such as the Minefield and Solitaire games that come with Windows. (Boo, hiss.) To maintain a manageable — and legal — software situation, users should not be allowed to bring their own software from home.

Optional software utilities, such as desktop "shells," fancy third party screen-savers or system enhancements can sometimes cause reliability, memory or software installation problems and should be either eliminated completely or kept to a strict minimum.

Some people argue convincingly that these frills greatly enhance productivity and make life oh-so much easier, but they DO cause problems.

Technically minded administrators with extra time on their hands might establish a "test machine," where they can carefully test productivity enhancing utilities and system extensions. They should insist that each and every addition to the "standard system" has the "stamp of approval" and is properly installed.

The administrator will also need to install and maintain appropriate peripheral drivers for removable drives & CDs, monitors, scanners, etc., as these are too complicated for most users to deal with.

Remember, the order things run in is sometimes relevant.

Set some rules about operating your systems, too.

- "Always restart when an application unexpectedly quits."
- "System crashes must be immediately followed by a disk check, no matter how far behind you are."
- "Backup disks daily," and
- "Check disks weekly."

Better safe than sorry.

You might want to print out a set of instructions and have copies pasted to the side of every monitor so everyone can see them and do what it says.

The best plan is to keep a written list of which versions are up to date. Instruct users on important topics such as how to perform a backup, disk-check, etc.

If you are satisfied with the performance of an existing version of software, carefully consider whether you need to upgrade to the latest, greatest version. New versions are often a one-way street, as files saved in a new version can sometimes not be loaded into older versions. As Will Rogers once said, "If it ain't broke, don't fix it." ■

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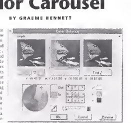
SHOW REPORT

Color Carousel

BY GRAEME BENNETT



At the recent Color Carousel 93 show sponsored by Benndorf Verster Ltd and Canon Canada Inc, product reps and exhibitors from a wide variety of companies demonstrated products and technologies that show just how far the electronic publishing industry has progressed Accurate color high quality output and powerful software characterized the event which featured exhibits by representatives from 15 companies Several of the industry's leading companies including Aldus Adobe, Benndorf Verster and Canon also held seminars on topics as varied as "photo retouching in the one hour photo lab environment" and "Creating Effective Presentations"

Benndorf Verster and **Canon** reps pitched a system they called "CPR" — Canon Photo Retouching — to an eager audience of one hour photo finishers who were told that digital retouching with Adobe Photoshop was the next great breakthrough that would expand the market in the way that auto-focus cameras and one-hour photo finishing had done previously

Basically the system consists of a Macintosh Adobe Photoshop and a Canon CJ 10 ink jet printer/scanner/copier While we remain dubious that consumers will find the quality of CJ-10 prints — even those on special glossy stock — good enough to pass off as "enlargements" no matter how little they cost or how fast they are produced the system is relatively cheap and fast Perhaps in a few years we'll routinely ask our camera clerk to edit the red eye out for us on the spot.

Adobe was at the show, showing Photoshop and Illustrator 5 0 on the Mac, but, as several attendees noted the show was significantly more PC-oriented than the previous year's show By my estimate 75 percent of the attendees were PC users and maybe 25 or 30 percent Mac users Last year's show according to Kevin Jampole of Aldus had been 75% Mac and 25% PC This switch caught several exhibitors off-guard, and most booths displayed Macs and Mac products.

Radius was showing several Mac products including the Radius Rocket accelerator VideoVision Studio PhotoBooster (an accelerator for Adobe Photoshop powered by twin AT&T 3210 Digital Signal Processors) the PrecisionColor Pivot (a monitor that can switch between portrait and landscape modes) and large screen Trinitron color monitors for Macintosh and IBM compatibles The Trinitron on display retailed for $3895 Radius rep Stephen Fehr explained to one aghast onlooker

Aldus, enjoying strong sales of PageMaker 5 0 was showing that product on the PC along with the recently released Mac version of FreeHand 4 0 and the company's other wares

Joto Paper Ltd was showing how the Paro Digital Heat Transfer System can put images from a Color Laser Copier (CLC) onto a T shirt Passersby were lured by the promise of free transfers and watched as images from Photoshop FreeHand and other PC or Mac programs were transferred from the special paper to fabric The quality was very good and according to the company, images will withstand multiple washings and won t crack or peel. The company was also quick to point out that the system is environmentally friendly and not harmful to the CLC

Corel Corp. was demonstrating a raft of new products including Corel Ventura CorelDraw, the new $99 CD Power Pack, and Corel s Professional Photos CD-ROMs

One hot feature of Corel Ventura 4.2 is its support of Adobe Acrobat Corel Ventura is the first third-party product to provide direct support for the pdfmark operator of Adobe s electronic document creation software.

Portable Document Format (PDF) files preserve the essential look and feel of a document regardless of the hardware platform operating system application software or typeface specifications used to create the original These PDF files can be viewed with Acrobat Reader which is included with Ventura 4 2. Windows and Macintosh versions of Acrobat are currently shipping; Unix and DOS versions should be available soon

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Continued on page 55

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Carousel

Continued from page 54

The new release combines the basic Ventura package with Ventura Database Publisher a utility that helps users format data for desktop publishing. The whole combination plus no less than three CD-ROMs (!!) of clip art and fonts sells for US$249 or C$299

The software runs on Microsoft Windows and needs a personal computer with at least an 80286 processor, 4 megabytes (MB) of memory (6MB is recommended) a mouse or other pointing device at least 14 MB of free disk space and an EGA or better, Windows-compatible display Corel also recommends a compact disk read only memory (CD ROM) drive

The package includes Ventura Publisher, Ventura Database Publisher, the Ventura Separator utility for color separations the Ventura Scan utility 75 style sheets and three CD-ROMs loaded with more than 600 TrueType and PostScript Type 1 fonts more than 10,000 Encapsulated Postscript clip-art images and 100 royalty-free photos in Kodak Photo CD format The clip-art library is the same one supplied with the CD-ROM edition of Corel's flagship graphics package, CorelDraw, said company spokeswoman Julie Galla.

Prior to this show, I had not heard the exact details of Corel s upgrade policies for Corel Ventura 4 2 The program as mentioned in the Dec. 93 issue of The Computer Paper ships for C$299 but what we didn't mention is that registered users of all previous versions of Ventura Publisher (Windows/GEM) can upgrade to Corel Ventura 4 2 for C$129

Registered users of any version of CorelDraw can purchase Ventura 4 2 for C$129 For C$379 registered users of any version of CorelDraw or any version of Ventura Publisher can purchase a special upgrade bundle containing the new releases of both programs Upgrades are available directly from Corel by calling 1 800-772 6735 or 613-728-8200

Corel s CD Power Pak includes cache software for SCSI or non-SCSI CD-ROM drives, a CD-ROM of sound clips, a CD-ROM of 100 Photo CD pictures, a CD audio player a WAV file editor a Photo CD image export and conversion utility, a utility called Wallpaper flipper Corel s Mosaic Visual file manager a troubleshooting utility — and even a set of Koss headphones It's a good deal for C$119 if you have a CD ROM drive

At the other end of the price spectrum a company called **TELAV** was showing some very high quality (we re talking big bucks here) Barco Retrographics projection screens and distributing helpful pamphlets on preparing slide presentations and other multimedia related topics

Nearby **Devcom** was advertising its Macintosh network solutions.

Representatives from **IBM** and spin-off **Lexmark** were there, too IBM was showing OS/2 2 1 running on a ThinkPad 750 — surely one of the coolest portables going, with its active matrix color screen PCMCIA slots, integrated fingertip pointing device and DSP sound capabilities The IBM rep verified the rumor we had reported on last issue that IBM has announced a version of OS/2 without built in Windows support, so that all those PC owners who already use Windows (i.e nearly everybody) can upgrade to OS/2 for less money

Lexmark was showing, as you might expect at a show about color its color ink-jet printer

Canon, of course is strong in the color market with products including the $800 BJ 200C Ink-jet, the under $10 000 CJ 10 right up to the CLC series of big money color lasers A Canon rep bragged that the Canon CLCs were the reason the Canadian government started putting holograms on the paper money It seems that the color copiers were accurate enough to fool more than a few people

Accurate color was the main reason **EFI** was there (Efi Arazi's company name is allegedly an acronym for Electronics for Imaging) EFI was showing its EFIcolor color accuracy technology (supported by QuarkXPress or available separately) Cachet image-processing system and the Fiery raster image processor add-on that dramatically improves the quality of images output from the Canon CLC products.

Apple was at the show with several of its new products (and across town also maintaining a booth at the Multimedia Communications '93 conference at UBC which I ll discuss in a future issue of *The Computer Paper*) Although not particularly related to color or DTP, one of the most impressive products I saw at the show was a Newton The Newton you see is a device that you "train" to read your handwriting

Unfortunately this means that the Newtons you see in computer stores are either untrained (typically store units are set to "Guest mode") or crazy trained with a large number of inappropriate variations Schizophrenia Newtona. At least for me, Newtons in stores have always performed pathetically I had almost become convinced that the system was all hype (a unit I tested in one electronics store couldn t read a word of my most precise hand-printing and repeatedly thought my carefully printed name read "Yvonne")

Then I had the pleasure of seeing a properly trained unit in use by its happy owner As I peered over his shoulder I watched this Newton owner writing in regular cursive handwriting, at something approaching full speed The Newton captured every word correctly turned the handwriting into typed characters and entered the information into a scheduling program The Newton owner explained and showed me how to train the unit to recognize my own handwriting style Minutes later it was correctly recognizing my writing

I ll be reviewing a Newton MessagePad in a future issue of *The Computer Paper* but at least I'm not Yvonne anymore ■

Contacts

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ANALYSIS

Microsoft's Long Road to Cairo

BY GEOF WHEELWRIGHT

Microsoft will be giving Windows users a lot to think about in the next 12 months. During that time, it will kill off the Windows "family" of operating environments, introduce an all singing/all dancing object-oriented Windows 4.0 (currently code named Chicago) and take what could be the final bite out of the market share held by its own MS-DOS operating system.

Like the rest of the "undead" in the technology graveyard, DOS will be allowed to continue roaming the earth, but will visibly be seen to have had its lifeblood sucked out by Windows 4.

All of this bloodshed is a form of technological euthenasia, allowing the disparate and incoherent strategies represented by the current Windows versions (including Windows 3.1, Windows for Workgroups 3.11, Windows for Pen and Windows NT) and implementations of MS-DOS to be replaced by two simply defined and quite different versions of Windows: Windows 4.0 and Windows NT 4.0 (currently code-named Cairo).

Windows 3.11

To prepare us for the shock of this move, Microsoft will make a pre-emptive strike this spring. It will replace all current 16-bit versions of Windows with the recently-released Windows for Workgroups 3.11, although the product is likely to be named simply Windows 3.11.

There are big advantages to this move for Microsoft. Not only does it eliminate a great deal of user confusion and make service and support a lot easier, but it also makes life even tougher for arch-rival Novell. If everyone gets network client software as part of Windows — and Windows is pre-installed on the vast majority of new PCs — then Novell will find it increasingly tough to sell products such as NetWare Lite and even its new DOS 7.

This new iteration of Windows will also likely see the first appearance of Microsoft's support for the Plug and Play expansion standard under development by a consortium of hardware and software companies (of which more later).

All of this is expected in the Spring of 1994, in time for release at Comdex in Atlanta. Meanwhile, the big Windows upgrade story of the year — Chicago — will not likely hit the streets under around September time.

Chicago: The Windy City Blows Hot Air

When it does, however, it is expected to fuel an already hot Windows market in a very big way. Chicago will contain most of object-oriented goodies that Windows users have admired in Apple's System 7 for the Macintosh, Steve Jobs' NeXTstep and Sun's Solaris. It will also be a 32-bit environment - able to run most applications written in native 32-bit mode for Windows NT.

And finally, it will contain a new 32-bit version of MS-DOS, to be known as MS-DOS 7.0. Current Microsoft plans call for the company to offer MS-DOS 7.0 to those that want it, but the company expects most people will just buy Windows 4.0 (which will come with MS-DOS 7.0 built-in).

As Microsoft executive vice-president Mike Maples puts it, there is no demand for a 32-bit version of DOS and almost no-one will be rewriting old DOS applications to take advantage of a 32-bit DOS environment. Those developers who do move to the 32-bit Windows market with Chicago (and most are expected to) will be writing Windows 4.0 applications.

By the time Chicago is released, Microsoft expects to have sold more than 50 million copies of Windows 3.x (including 3.0, 3.1 and 3.11). The company has also indicated that is anticipating a huge upgrade demand from Windows 3.x to Windows 4.0, with first year revenues from sales predicted by Microsoft chairman Bill Gates to exceed $500 million.

"Chicago will be the most popular systems update we have ever put out," he said.

Continued on page 65

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COMDEX AND WINDOWS SOLUTIONS REPORT

Autumn Events Show There's Still Room For Fun

BY GEOF WHEELWRIGHT

Big product launches — like the recent unveiling of Microsoft s Office and Lotus SmartSuite 2.0 — may come and go, but it is the small and quirky product announcements which make the computer industry such a fun sector to work in

Take a crop of recent releases at the US **Windows Solutions** show in California While hundreds of people thronged to see Windows NT SQL Server, DEC Alpha Systems, MIPS machines and Borland Quattro Pro 5.0 lots of offbeat little products helped themselves to whatever peripheral spotlight they could grab

'ere, Wot's That?

Consider for example the merits of a new microphone for PC users developed by Blue Sky Technologies of Livermore, California The greatest distinguishing characteristic of this microphone? It is shaped like a human ear Known as EarMic, it is actually a combination microphone/amplified packaged in an ear shaped casing

EarMic runs on batteries, weighs less than seven ounces attaches to the side of most surfaces with the use of two Velcro strips and comes with a three foot coaxial cable to connect it to your PC And the president of Blue Sky, the ebullient Marc Roberts, takes the product very seriously even suggesting that you may want to decorate it with earrings!

"With approximately 250,000 sound cards sold each month we recognized that no one was addressing the microphone aspects of multimedia with anything specific he says Roberts also suggests that there are problems with a lack of sensitivity in unamplified microphones — and that users don't often know where they should put them "The EarMic is designed to solve both of these problems and provides an additional feature missing in many PC products today — fun," he enthuses EarMic sells in the U.S for $32 95 — bend his ear at 510-447-3277

When Less is More

A slightly less off beat approach to new product development comes from Canadian PC manufacturer Darius which plans to take a plunge into the personal digital assistant market next year President and founder Benny Tam however, has some strong ideas about what should be in a PDA — and how it should work

He says that so far PDAs have tried to over reach the ability of the available technology for example, by using high-powered RISC chips (such as the UK designed ARM processor in the Apple Newton) when standard Intel-compatible chips would do Tam believes that the key to this lies in what you do about character recognition

At the moment the ability of most PDAs is read hand writing is so poor that Tam says it should be discarded as the principal means of text input Instead he favors a system whereby users could input "ink" data via a pen, yet type proper ASCI characters into the

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system by using the pen to tap on an on screen keyboard. Such a keyboard is actually included on the Tandy/Casio Zoomer but Tam believes that its designers could have made more of this feature.

Tam also suggests that PDA designers have got the idea wrong on pricing. He says that all the offerings so far have been too expensive. There is only a limited market for devices that fit in your pocket and cost more than $1000 (which is certainly what you'll pay for Zoomer or Newton once you've got the PDA and all the bits and pieces actually needed to make them useful). Tam promises that his system will sell for around the $500 mark.

So when Darius shows its first PDA product at next year's Spring Comdex expect a product that doesn't even bother to attempt hand writing recognition, yet aims to do an exceptional job of handling ink data, storing and working with text and providing high functionality built in applications.

Greening Of The PC

Meanwhile anyone who wants to make their PC a bit "greener" might want to have a look at Server Technology's new Remote Power On/Off, a remote-control power system for PCs that lets you switch them on and off remotely. It is designed to encourage users to switch their systems off when they are not using them.

When the Remote Power On/Off system detects a data call it switches on your PC, lets it answer the call and powers it down again when the call is finished. It also comes bundled with a copy of the popular remote control package PC Anywhere, so you can dial into your PC remotely from anywhere in the world, take down the information you need and then get the PC to switch itself off again. The whole system sells in the U.S. for $199.95.

Contact Telephone 408 988-0142 or fax 408-988 0992

Starting Over

But you don't need hardware gimmicks to save power. You might also want to consider the merits of a clever sub $100 utility just released in the U.S. called Quick Restart. It is a small memory resident utility from California based PowerPro Software that allows you to "save" an image of your work to your computer's disk and then switch the machine off. When you switch it on again the software looks at the stored image and uses it to reload all your work so that it starts up again exactly where you left off.

This means that if you commonly work with, for example, a word processor, a spreadsheet and a desktop calculator utility in Microsoft Windows, you don't have to go through the tedious process of restarting Windows, then loading your word-processor, spreadsheet and calculator every time you switch on.

Quick Restart reloads the data files you were working with when you switched off even if you hadn't actually saved them. This software will only work, however, if you give it the command to save an image of your work before you switch it off. If you don't do this — or power is switched off accidentally — Quick Restart can't help you.

Have You Got A License?

Another intriguing little offering came from the California based Elan Computer Group, which is offering a new Windows software licensing control system. Known as Elan License Manager it is being offered for Windows 3.1 and Windows NT.

The product helps corporate users keep track of the software licenses it holds across Windows, Unix, DOS and Windows NT systems on a corporate wide network. It lets corporations offer user based licensing so that you can control the number of users of a given application (e.g. if you buy a 50-user license for WordPerfect it will make sure that no more than 50 users are running it at any one time), can set flexible expiration dates for evaluation copies of software and add copy protection to ensure that only authorized users can run certain applications.

Elan License Manager can also allow managers to adjust user licenses and expiration dates over the telephone and to license components within an application (e.g. the presentation component of CorelDraw.)

The Quiet Corners Of Comdex

Windows Solutions, of course, is not the only recent show where interesting but "off the-mainstream" launches have been made. There were also some at the recent Fall Comdex in Las Vegas. AST, for example, announced full details of a one pound PDA that uses technology it acquired from Tandy's Grid computer operations when AST took over some of Tandy's computer business last year.

Currently known as the Model 2390, it will use the same processing chip and Geos operating system as the recently released Tandy and Casio Zoomer products while offering the Grid PenRight pen computer operating system as an option. Price is expected to be less than US$1 000 and no information is available yet on international distribution.

Of interest to all PDA and notebook computer users was California based SunDisk's news that it has developed a 40 MB "flash" memory card that will fit in most PCMCIA II slots. While a number of hard disks in this size have been developed (including one from SunDisk) this is the first solid-state memory card with this capacity. It should start shipping by next spring at an initial

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Room for Fun

Continued from page 59

AT COMDEX, AT&T's EO personal digital assistant with optional cellular telephone. EO announced its merger with AT&T last summer.

price of $1,995, although that price is expected to drop as demand and volume increases.

Another portable computing first at Comdex came from Dolch Computer Systems, which is offering the world's first Pentium-based portable computer. It also happens to be the first computer in this size to use liquid-cooling to reduce the heat generated by the Pentium processor. A small fluorocarbon liquid pack is placed on top of the chip to absorb the much publicized heat of the Pentium to a "heat sink" system that evenly dissipates it throughout the system.

It is to be released in two versions, the PAC 586 and the A-PAC. The first will be a straightforward, high-power, 20 pound color "lunch box," AC powered portable, while the second will add a CD-ROM drive, sound card, a microphone and stereo speakers to make it able to handle multimedia software. Prices will start at around US$6,000.

Another unusual portable computing plan comes from DEC, which is talking about using a planned low-power version of its extremely powerful Alpha chip in both a laptop computer and a PDA. The company says it is also talking to people in the personal digital assistant business, yielding the possibility of handheld, Apple Newton style Alpha-based devices probably running some form of the Microsoft At Work software architecture. DEC is hoping that such a move would give Alpha the kind of broad-based, high volume sales it needs to make it competitive with other offerings.

A Higher Profile

And then there was Apple's Macintosh Quadra 610, a system which comes optionally equipped with a 25 MHz Intel processor and special internal add-ons that will allow it to run DOS and Windows software. Although Apple has offered options to allow its Macintosh systems to run PC software for many years, none was ever able to do so with the kind of price/performance that would match what the hordes of PC clonemakers were able to do. Not only can the Quadra 610 run Mac and PC software, it can run them at the same time, with the "native" Motorola processor handling the Macintosh applications and the Intel processor dealing with the PC applications.

Apple's biggest push at Comdex, however, had nothing to do with the Macintosh, but rather with its recently released Newton personal digital assistant (PDA). Although it has been on the market for several months — and apparently sold in excess of 50,000 units — Newton has suffered from a lack of add-ons to connect it to desktop computers.

The answer to this problem came at Comdex in the form of Apple's Newton Connection kit for Windows, which allows Newton to exchange information with Windows-equipped IBM compatible personal computers. The kit was co-developed with Washington-based Travelling Software, makers of the popular LapLink software for linking laptop and desktop computers.

In addition, Apple finally started shipping its long-awaited $220 Newton FaxModem card with 2400 baud communications speed and Group III fax compatibility. The company also co-developed this product — this time with communications specialists Megahertz — and offers it on PCMCIA (Personal Computer Memory Card Industry Association) Type II card.

Conclusion

So who says there is no innovation left in the computer industry. It's not all just cheaper, faster, smaller and more colorful. There are still software and hardware designers out there who put their minds to trying new things and creating unique solutions for their efforts. Some — like the EarMic — are a bit over the top, but they remind us that the industry is not just about bits, bytes and bottom lines. There is still room for fun. And thank goodness for that. ■

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COMDEX AWARDS

Simon Wins *Byte* Magazine "Best Of Show"

BY DANA BLANKENHORN

LAS VEGAS, NV (NB) — Simon, a cross between a cellular phone and a PDA (personal digital assistant) made by Mitsubishi, designed by IBM and distributed by Bell South, won the "Best of Show" Shelly award from *Byte* magazine.

The Shellys are named for Interface Group Chairman Sheldon Adelson, and are awarded to products offering technical excellence.

Byte Editor-In-Chief Dennis Allen said in a press statement that, "because it integrates phone, fax, and paging functions so well with its software, Simon is indispensable for mobile communications." Some, however, have criticized the product because it uses a proprietary operating system. Simon also won in the "Best Portable" category and was displayed at the IBM OEM (original equipment manufacturer) booth in the Main Hall of the Las Vegas Convention Center.

Another winner was Apple's Firewire, an implementation of a new technology technically called the 1394 High Performance Serial Bus. The magazine's editors said the new technology, which has been implemented in silicon by Texas Instruments, could help greatly improve consumer electronics products as well as computers. Other companies which helped develop the technology included Adaptec and Maxtor, AT&T's NCR unit.

VRex Inc. won the "Rookie" award for its Micropol, a manufacturing technology which puts a checkboard pattern of tiny polarizing filters over a screen, providing three-dimensional (3-D) effects without eyestrain using inexpensive glasses with oppositely polarized lenses.

Also, the Apple Quadra won for "Best System," combining Macintosh and Windows technology in the same product. The Data Port Multimedia Communicator from AT&T Paradyne won for "Best Connectivity / Hardware." A PCMCIA (Personal Computer Memory Card Industry Association) removable hard disk storage system from SyQuest, called the SQ1080, won for "Best Peripheral."

LinkWorks from Digital Equipment won for "Best Connectivity Software." Austek's A1060, a graphics accelerator, won as the "Best Multimedia Hardware," and Ultimedia Video IN/2 from IBM won as "Best Multimedia Software." The QMS 2001 Knowledge system, which combines computing, scanning, copying, faxing, modeming and printing, won as "Best Printer."

Microsoft Windows NT, which was essentially a technology demonstration and did not ship until months after it was shown, was the "Best in Show" winner at the Spring Comdex in Atlanta. ■

COMDEX HARDWARE

PowerPC, Workplace OS Central To IBM

BY GRANT BUCKLER

LAS VEGAS, NV (NB) — If IBM is ever able to unify its fragmented product line, it will probably be around the company's PowerPC microprocessors and its forthcoming Workplace OS operating system.

IBM was reportedly discussing products and strategy with some 1,800 customers, resellers, and other business contacts from around the world at a series of breakfast meetings during Comdex/Fall. The company also held a press briefing for reporters.

"To achieve the full benefit of (the PowerPC architecture) it must be able to pervade the entire IBM product line from the very bottom to the very top," said James Cannavino, newly appointed senior vice president for strategy and development.

Later, Lee Reiswig, president of IBM's Personal Software Products (PSP) division, said the company is "going to scale Workplace OS as far as we can across the product line."

Specifically, Cannavino said the group that builds IBM's midrange AS/400 computers is already planning a move to the PowerPC architecture.

At the same time, Cannavino was careful to reassure users of the company's current PCs that it will not soon abandon the Intel processors that are the current personal computer standard. He was also cautious in discussing plans for Workplace OS, a new operating system that IBM is building around a micro-kernel developed in cooperation with Carnegie-Mellon University, and AIX, its variant of Unix.

IBM will continue developing those systems in parallel with Workplace OS, a system that will be able to take on multiple OS "personalities" and run software written for Unix, OS/2, Windows or Apple Computer Inc.'s Macintosh.

Cannavino said IBM is working to have Workplace OS ready for release in 1994, but added "we will serve no wine before its time." The first release will be for PowerPC systems, he said, "to complement our existing Intel investment."

While Cannavino maintained Workplace OS will not replace OS/2 or AIX — and IBM Chairman Louis Gerstner echoed that message in a video shown to customers and reporters — Cannavino's comments made clear that customers using either OS/2 or AIX will be able to migrate to Workplace OS, and in the long term it could become the upgrade path for both sets of users.

IBM is not standing still on OS/2, though. The company announced OS/2 for Symmetric Multiprocessing (OS/2 SMP), a version of the operating system that will run on multiple-processor systems.

Wally Casey, director of marketing for Personal Software Products at IBM, said this will enter beta testing by year-end with a number of independent software vendors. It will support as many as 16 processors. ■

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COMDEX KEYNOTE

Bill Gates Eyes The Future

BY JIM MALLORY

LAS VEGAS NV (NB) — Bill Gates looked at the future of computing in his keynote speech at Comdex. He said he sees the walls coming down between applications

From Gates perspective the future of computing, not surprisingly is based on present and future versions of Microsoft Windows Gates claims there are currently 50 million personal computers in use today and 40 million of them are using Windows

Gates cheerfully spoke the lines of the script he and some fellow actors had learned. He even donned a hard hat as he was shown how more powerful computers running Windows NT (New Technology), Microsoft's second generation of Windows that no longer relies on an underlying DOS operating system, can be used to run computer controlled machines in factories and for other applications.

Gates predicts that within the next two years, a CD ROM drive will be as commonplace in all PCs as hard drives are now He also said the use of sound will expand greatly in the next few years and PCs will be used to run interactive movies and act as terminals for videoconferencing

Gates teased his audience, some of whom saw the speech via closed circuit television in various venues, with a glimpse behind the veil that currently surrounds "Chicago" — the current project name under which the next version of Microsoft Windows is being developed.

Chicago will support plug-and play, one of the better technologies to emerge recently as far as the user is concerned — which allows the operating system and the base hardware to recognize peripherals and applications that are added automatically reconfiguring the base system to work with those add-ons Chicago even allows the changes to take place while the system is running

Gates also spoke briefly about Cairo, the next generation of Microsoft Windows NT Cairo expected to ship in 1995 will make much greater use of object-oriented and distributed computing He cautioned that all these developments will take time but says by the end of the decade most will be a reality ■

COMDEX MULTIMEDIA

CD-ROM Playground Showcased

BY DANA BLANKENHORN

LAS VEGAS NV (NB) — The Multimedia Showcase at Comdex was filled with new CD ROM titles David Hoeh director of international sales for Max Media, a distributor with a booth at the show estimated to Newsbytes that there are now 3 500 titles, of which 850 or so are commercially viable

These range all over the lot from CDs for kids to adventure games for teenagers to strictly adult only titles There were even titles for distributing other titles like Rainbow Technologies VendorSystem, a software distribution system under Apple Computer's new Software Dispatch program which lets customers try software before they buy it

A number of companies offered whole catalogs of titles. Warner New Media's catalog offered 18 new titles including a jokes disk called Funny an interactive adventure called Hell Cab as well as titles from *Time* and *Sports Illustrated* magazine, and a children s game called Word Tales.

The catalog from the CD ROM Source offered four religious titles alone, including all major versions of the Old and New Testaments, and a disc which also includes 20 religious reference books with concordances the equivalent of 134 000 pages The Tribune Co s Compton s New Media unit, which caused controversy with its multimedia patent offered a catalog with over 100 titles

Learning titles were very big BayWare offered Power Japanese for Windows while PageWare by Advance offered a range of computer training discs for MS-DOS Macintosh, and OS/2 software Allegro a long time creator of floppy-disk titles, also began offering software training on CD-ROM, as well as multimedia references and graphics for desk top publishing and presentations

Kids were a major target market for this year's CD-ROM publishers MacMillan offered a Dictionary for Children and a CD-ROM on firemen from its explorer series Media Vision offered the Forever Growing Garden and Professor Gooseberry's I Can Read Club Knowledge Adventure introduced a series of adventure disks, from dinosaurs to zoo animals to bugs, outer space and Peter Rabbit Older kids might like Will Vinton s Playmation, a three-dimensional (3-D) motion picture studio on CD ROM with powerful rendering features and exclusive animation technology ■

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COMDEX ANALYSIS

New Perspectives And Old

BY DANA BLANKENHORN

LAS VEGAS NV (NB) — Comdex is always filled with wonders and intrigue This year was no exception For perspective, Newsbytes talked to both show veterans and newcomers.

One of the newcomers is comedian Gallagher who said the aim of Comdex should be a "calm desk." This was echoed by IBM Personal Computer Co Vice President Joseph Formichelli who said the industry is just waking up to its responsibilities not only to the world but for the world its work has made So he has coined the term "natural computing " That means computers should be simple and easy to buy use and service They should also be comfortable — meaning ergonomic and generating good feelings — and their makers should be responsible recycle and be "good corporate citizens "

Said Formichelli "They'll be a big switch thrown and people will understand it You ve got to design it into the products, into the plants and into the companies "

This was the year Hollywood came to Comdex Those who attended the 7th Level reception spent the rest of the week comparing notes on celebrities they had seen A partial list included Penn Jillette of "Penn and Teller," Linda Ronstadt, Quincy Jones, Steve Winwood, and Shelley Duvall.

Visicalc creator, and current Slate Corp vice president Dan Bricklin said the trends come down to one term — new media. New Media encompasses anything beyond letters and numbers, including desktop video video art CD-ROMs, even the best part of pen computing "The one thing people caught onto with pens is electronic ink, and that s a New Medium " he explained.

Handwriting recognition may not have been ready for prime time but handwriting does offer "control and free form input compared to old types of data " The mass market now understands this as a big business and some analysts argue that computing will never be the same ■

AT COMDEX The BAT personal key board uses WordChords
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COMDEX PRODUCT

ATI Aims At High-End Video, Low-End Graphics

BY GRANT BUCKLER

LAS VEGAS NV (NB) — Three new products from ATI Technologies Inc of Markham Ont , are out to attract users who want better video capture and video processing or low-end graphics acceleration

The Video Wonder card captures compresses, and plays back motion video Company spokesman Andrew Clarke said that unlike other cards it allows users to play back compressed video from their hard drives at full motion and using the entire screen. Most would only be able to display such video in a window Clarke said

The Video Wonder is among the first devices to use the Shared Frame Buffer Interconnect specification developed by ATI and Intel Corp This allows various video and graphics functions to share the same memory simplifying interaction among different functions

It comes with two megabytes (MB) of video RAM, and can be upgraded with 2MB of dynamic RAM With the DRAM added, Clarke said video capture functions can use the added DRAM, leaving the full 2MB of VRAM free for compression

The new Video It card is a video capture device essentially a subset of the Video Wonder for those who already have the video accelerator Clarke said. The Graphics Wonder card is a low-end graphics accelerator designed to work with VGA graphics adapters.

The Graphics Wonder card will be available in January for C$249 The Video It card will ship in March at $499 and the Video Wonder will be available in April for $1 299 ■

Contact: ATI Technologies, 905 882 2600 fax 905-882-2620

AT COMDEX Cyberdreams announced its CyberRace 3D combat and racing simulation would be available for the Mac in '94 The Windows version was available this fall
Contact Cyberdreams 818-348 3711

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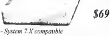

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Cairo

Continued from page 57

Although DOS 6 sold more than five million copies in the time before the release of DOS 6.2, Gates says they "would hope to do a lot better than that with Chicago"

Keeping The Windows Shut

While Chicago is still more than six months away from release, it is already generating huge amounts of interest in the press so much so that Microsoft has begun to express concern over the volume of leaks about the product.

This flood of information about Chicago started in mid-September following an extensive briefing given by Microsoft to its top OEM (original equipment manufacturer) customers including the likes of Compaq, Zenith and DEC. Some 60 "alpha" release copies of Chicago were handed out at that event with the understanding that the users of those copies would respect the company's heavy-duty non-disclosure agreements

As is inevitable in such circumstances, the computer industry's fourth estate did get hold of a few copies and went about the business of telling the world what to expect in Windows 4.0

These more detailed looks at Chicago — at least as it stands at the moment — reveal an operating system capable of living up to the hype surrounding it. To start with, it eliminates the dreaded file and program managers providing instead a much more Macintosh-like desktop in which all files are contained within folders (subdirectories) and have icons and applications associated with them.

It will also supply fully integrated support for the Plug and Play expansion standard. And Plug and Play is likely to be a major factor in PC design by the time Chicago is released. In November a coalition of more than 20 computer hardware and software companies released the final Plug and Play BIOS specification.

The announcement came only six months after the introduction of the Plug and Play initiative, which is an industry wide effort to develop an open architectural framework for integrating PC hardware and software. Plug and Play PCs are supposed to allow automatic installation and configuration of add-on devices, and enable dynamic reconfiguration to support new scenarios such as 'hot docking' of mobile computing systems

Despite goodies such as Plug and Play being a part of Chicago Microsoft admits that ultimately even Chicago will be supplanted by Cairo. Initially Cairo and Chicago will be offered as side-by-side entry level and upmarket offerings (like Windows 3.1 and Windows NT) but eventually there will only be one Windows operating system and it will an evolved form of Cairo.

All Roads Lead To Cairo

Due in about 15 months Cairo is the ultimate version of Windows. It will provide an upgrade path for users of Windows NT while also drawing in Chicago and Windows 3.1 users who want even more power and flexibility. Microsoft has said Cairo's goals will be to allow users to totally customize the way they create use, organize and find information on their computer

It is supposed to move users from merely being able to have a screen that provides WYSIWYG (What You See Is What You Get) to DWIM (Do What I Mean) by "learning" how each user works. Cairo will supposedly accomplish all of this by moving to a much more "object-oriented" approach where all information can be handled as objects, no matter what kind of information it is or where it is stored on the system. Microsoft says Cairo will take care of handling all the that bare-bones detail about business information, so that users can concentrate on work with the content of it.

What's It For?

Allchin, the head of Microsoft's Cairo development team expects it to be primarily directed to the creation, use organization and finding of information regardless of what or where it is. It will also provide a single consistent model for manipulating objects representing information (whether that information is being used by system software or applications)

When users actually get down to the business of working with Cairo, they may find that they need to rethink how they work with Windows. No longer will the world be divided up into application and file-based work - everything will be objects (i.e. instead of a document being identified as a word-processed file, it will be a document object that opens up whatever applications are necessary to work with that document and there will probably be several for any given document).

A Single Model

There will also be a single model for interacting with all objects - regardless of whether the object is being acted upon by users or internal operating system process. When you 'click' on a Cairo object for example you will be able to do a number of things with that object without opening it up. You'll be able to view it, mark it for copying delete it or send it elsewhere on the network to another user or group of users. As in Chicago, you will also be able to view the "properties" of the object and make changes to them as needed.

Cairo is also likely to look differently to different users. It will feature a "personal workspace" that is highly customizable and will provide the basis for how information on your personal desktop is organized and viewed. Although this exists in a rudimentary way with NT today users must know a great deal more about what they are doing in order to create a custom look at their data.

Public information source access will also be an inherent part of Cairo so that users can browse things such as public library catalogs phone books and store catalogs within a single object-oriented interface. That interface will also demand that a query based help system is available at all times and that users will be able to "clip, mark or copy" objects as they find them

Keeping Track

Cairo will also be very big on references, helping you keep track of "any object anywhere at any time" and keeping track of objects as they move. If for example, you have a spreadsheet model which relies for its conclusions on data held in another spreadsheet elsewhere on the network, Cairo will ensure that the "referenced data" on the network stored spreadsheet is not accidentally deleted by anyone. If the physical location of the spreadsheet changes, that this change is automatically "mapped" to the original sheet which contains a reference to it

There will also be a great many automation and assistance features within Cairo, with integrated programmability and agent support as part of the operating environment and help systems that seek to answer questions such as "What is this object?", "What do I do next?" and "How do I do this?" ■

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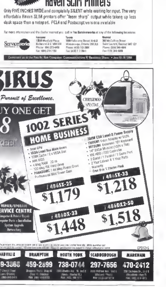

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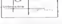

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comm*talk* BY JAMES MACFARLANE

Media Convergence

As WIRED magazine names Sonic the Hedgehog Man of the Year the buzzword of the month is media convergence.

Providers of telephone computer, video games, news cable cellular satellite, TV and radio services all want to give you what the others are offering The CRTC the FCC and industry groups are all examining the possibility of offering a new generation of electronic delivery systems and services.

The Technology

Telephones are unique in that they can connect any two individuals on the planet just by punching in a few numbers What makes this possible is switching equipment routes your call through a world wide network until it reaches its destination It s your private channel. However telephones lack bandwidth the ability to move high capacity information such as live video.

Cable TV, on the other hand, has a high bandwidth capacity It can carry hundreds of simultaneous live video signals and an even greater number of conversations. But cable lacks switching — what is sent down the pipe goes to everyone on the cable network.

The Internet sits somewhere in between — software can route connections between two individuals and some areas of the Internet have enough bandwidth to carry high-capacity signals but this capacity is not universal throughout the network. Commercial applications using the Internet are limited because a good part of the net is funded for non-profit research purposes.

The Players

Telephone and cable companies covet each other s abilities The union between Bell Atlantic telephone carrier for the U.S eastern seaboard and cable carrier TCI (Tele-Communications Inc) is just one of the technological marriages of convenience sweeping U.S. media and telecommunications firms.

The goal is to make high speed data and video conferencing as easy and eventually as cheap as a regular telephone call This is the electronic superhighway everyone s been talking about

Bell Atlantic and TCI aren t the only companies jumping on the media convergence bandwagon At the other end of the spectrum, Apple is experimenting with Mac TV an all-in-one home telecommunications terminal that will act as your TV VCR, phone fax, and gateway to interactive on line services

Meanwhile, on the other side of the digital fence, Bill Gate s "Microsoft at work" program intends to not only have Microsoft software running on every computer on the planet but also to have it running in every appliance that has a CPU in it Microsoft is talking with manufacturers of everything from laser printers and voice mail systems to cable TV converters to encourage them to build in a Microsoft-designed interface Imagine what this would for the "smart house" industry

This may be point where the sleeping Apple-IBM alliance giant is forced to wake up The world is going to need standards for interactive multimedia services software and hardware and it s going to take someone big to convince the public that they're the right choice Will the battle of the future of media services be between Sega, Microsoft IBM Nintendo and Apple? Look forward to a new wave of standards wars "Will that be Beta or VHS."

Rupert Murdoch News Corp which owns *TV Guide* among other things, has just bought up Delphi one of the largest Internet access providers in the U.S. It has also started working on a product called TV Guide On Screen Most of us get confused about what channel is allotted to which number on our cable converters TV Guide On Screen eliminates all that by providing an on-screen directory that you use to navigate the channels It s all integrated with a central database of what s on for the next week Remember the headache of programming your VCR? Remember how VCR Plus was supposed to make it easier (as if punching in an 18-digit program code is any easier) Well all of that may become history with TV Guide On Screen The service is supposedly going to be the same price as buying the wood pulp and ink version of *TV Guide* The price is tame but it s really a wolf in sheep s clothing.

Once Murdoch has got the equipment in your home you re hooked because soon to follow will be all kinds of other on line news services, not to mention Internet connectivity that will all come through the same box TV Guide On Screen is jointly owned by Rupert Murdoch News Corp and Liberty Media Corp Liberty Media Corp is owned by TCI, which is owned by guess who Bell Atlantic It s a media empire in the making

Media mergers and acquisitions are happening everywhere U S home shopping channel giant QVC and Viacom battle for control of Paramount Blockbuster Video buys up TV production companies to gain inexpensive access to product Time Warner jumps in bed with Sega Nintendo courts Silicon graphics It s hard to pick up a business journal these days without seeing more of this media bed jumping

Advanced Connectivity

Marshall McLuhan wets his pants at this point. This same box can also bring you home shopping, home banking and the video rental store Getting back to the technology high bandwidth switching is what allows companies to create services like this That allows each and every one of us to have our own television

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channel. So instead of running down to your video store you'll just select the movie from a list of your TV screen and your video store will pump it into your TV and bill you for the rental.

Those of you who don't have credit cards to buy things online will be more or less non-persons. This could eventually eliminate the middleman — no neighbourhood video store it all comes from some central office somewhere else

How long will we have to wait before teleconferencing and video on demand are as common as telephone calls? Probably about five years

Whoever controls the TV-top cable converter box may control the future of interactive media. That's what the business press would like you to believe but those of use who have been tinkering around with BBSes know it doesn't always work out that way.

It's just what every 16-year old will want for Christmas, his or her own television station. Think about it a few thousand bucks for a couple of Hi-8 cameras, an editing deck, a few record/playback units and an Amiga/Video Toaster and you've got 90 per cent of the hardware required to go on the air

All you need then is a transmitter With video conferencing then as easy as a phone call you don't even need that. It becomes just like running a BBS — people call in they don't tune in. This will do for television what the original Mac did for desktop publishing.

Of course there will be a darker side such as pirate TV stations and underground stations showing illicit sexual material. You may be able to censor TV stations but you can't censor telephone calls even if they are video telephone calls. The imagination boggles.

Radio Free Wards Island here I come ■

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game*review*

Coaster Thrills

BY GORDON GOBLE

"Oh, you CAD !" she snapped and, with a toss of her blonde mane, stormed off. It wasn't so much the stinging sensation across the right side of Pugsley's face, as the blow to his pride.

Title: Coaster
Publisher: Disney Software
Requirements: 386 or faster processor, 1MB Expanded memory, VGA Display

How could he have known that the obvious excitement in Bambi's blue eyes was more a result of her day at the amusement park, than of his own uncommon visual presence and unique personality? Yet in her fury Bambi had scarcely realized just how right she was in her three-word condemnation of him

With the advent of Disney Software's Coaster, anyone can be as CAD-like as our friend Pugsley. Marketed more as a game than as an entertaining introduction to the world of three dimensional CAD drawing, Coaster permits one to design, build, then ride one's own (you guessed it) roller coaster. Disney's newest venture into software gamery has several things going for it, not the least of which are its petite size (a mere 1.1 MB), and its ability to run on ancient relics such as 386 processors. As well, Coaster's thorough manual includes information on roller coaster building throughout the ages, program troubleshooting, and brief explanations on the inner workings of computers and computer memory for neophytes young and old.

Such newcomers may want to jump right in and experience the front-seat first-person

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perspective of the ride itself. They may do so by loading one of the several examples of world renowned pre-built coasters Disney has thoughtfully included with the program. Certainly a "virtual" coaster is an ambitious idea, and while the "clackety clack" of wheels against rail helps audio make the grade, video is wanting — sort of a throwback to those EGA days of yesteryear. The track is skeletal at best, scenery is minimal and no, one cannot be viciously hurled to the ground from a derailed car. While both pre-built and self-designed coasters will give an inkling of the "chuck your lunch" feel of the real thing, Pugsley soon discovered a desire to discard his crash helmet in favor of the drawing board.

In choosing the design coaster option, Pugsley's screen was suddenly filled with a fully functioning CAD program! A detailed grid defined working space, and a pair of button bars offered various track pieces and movement keys. He could zoom in and out, rotate, flip, and manipulate his work while in progress — for views had correct perspectives from all angles — and even the klutzy Pugsley was up and running like an expert inside of 15 minutes.

A full variety of track sections were now at his disposal, and as the Pugmeister pieced together curves, loops, barrel rolls and climbing straights (ascent aids), his own masterpiece of ironwork began to take shape. Height, pitch, banking, track color, section lengths, and even the desired gravitational pull were fully adjustable, and Pugsley knew he had found his calling. They say Rome was built in 40 days, but Pugsley had completed his first coaster in under half an hour.

Sadly though, when design met application, Pugsley's dreams of coaster glory plummeted quite a bit faster than his actual creation — his coaster made it to within inches of the first summit when it began to slide backwards. It seemed a straight piece of track had mistakenly been inserted where a climbing straight was required. Fortunately, all coasters have an accelerator feature (right mouse button) to help smooth over the occasional design fault, and after a quick "goosing" prompted the cars over the first rise, gravity took command and the rest of the ride was completed in hands off mode.

Post ride, Pugsley was able to check a number of design characteristics such as Ride Time, Average Speed, Top Speed, Maximum Height, Maximum G's, and so on. In this Signature mode, the screen offered Pugsley both a wire-frame first person perspective of the ride in the upper left corner, a polygraph style plotter at the bottom and graphically depicting elevation changes and G loadings. The overall stats were not awe inspiring, yet Pugsley was feeling more than a little satisfied with his premier effort when The Evaluators, including one "Bambi Barles", made the scene.

The Evaluators are an eclectic group of people residing inside the Coaster program whose sole function is to critique the gentle nuances and stomach turning factor of each particular structure. The Surfer Dude, Mousy Librarian, Nintendo Kid, Little Old Lady, Dippy Blonde, and Rednecked Cowboy make up the judging panel, and are bonded together only by their love of the thrill of the rails. Each favors a certain aspect of a coaster ride, and where a relatively tame affair will produce weary expressions and sarcastic comments, a hell bent screamer will cause hair to stand up, glasses to shatter and elicit remarks like "Wicked, shark attack intensity. Sober Job!" (Surfer Dude).

The Evaluators were less than impressed with Pugsley's initial attempt. Yet it was a certain Dippy Blonde by the name of Bambi that took Pugsley's heart by storm. A bit of a speed fanatic, Bambi became his sole inspiration as Pugsley headed back to the drawing board for the creation of coaster #2. "Thumper's Delight" liberally incorporated 200 [illegible] drops and swirling loops into a demonic coaster that would surely make The Matterhorn seem like a walk in the park.

That this final product met with enthusiasm would be an understatement. The Evaluators were indeed impressed, but none more so than Bambi, whose "Whoo, who knew it could be this good? Can we try that again?" pushed Pugsley's romantic dreams to new heights. But this is where the tale of Pugsley started, and this is where it will end.

Establishing new graphic levels of first person amusement park thrills is not the strong suit of Coaster. Yet Disney magic does reside in the program's compelling and educational sampling of the world of CAD and in the constant challenge to build a better roller coaster. Although the words Mickey and Mouse may come to mind during [illegible] exploration, Coaster hides its own little magical kingdom within, and unveils a new facet of the world of the simple computer game. ■

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MS-DOS 6.2 Upgrade for Dummies

BY KEITH SCHENGILI-ROBERTS

Title MS-DOS 6.2 Upgrade for Dummies
The Fun and Easy Way to Install & Use
the Latest MS-DOS
Author Dan Gookin
Publisher IDG Books
Suggested Retail Price: $29.95
Softcover 385 pages 1993
Comes with MS-DOS 6.2 on three
3.5 inch diskettes

Most software manuals are incomprehensible to the typical user and DOS manuals are doubly so They are filled with details on commands you never use, are difficult to read and somehow never really tell you how to fix the problem you have suddenly run into five minutes before you are due to complete that really important assignment Before you start heading down the hallway for the fire-axe to help you reprogram your computer you might want to think about getting the *MS-DOS 6.2 Upgrade for Dummies* book/software combo.

This book is written by Dan Gookin the author who launched the original "Dummies" book which has spawned countless imitators It is also an innovative step for Microsoft to back this edition of Dummies with a copy of their new MS DOS 6.2 software However there is a version of the operating system software with a standard Microsoft manual available *MS DOS 6 2 Upgrade for Dummies* is aimed at the novice user and with a quirky sense of humour gently steps the user through installing the software and lists the most used DOS commands how to use them and in what situations Gookin does not pander to Microsoft — there is a chapter devoted to the many DOS commands the majority of users will never (or should never) use

Unfortunately the book does not go into great detail on the new features available in MS-DOS 6.2 This reflects one of the inherent trade-offs of this book. In its attempt to be useful to the general reader, it does not go into a lot of depth If you only need enough knowledge of MS-DOS to get by at work this book will give you a good introduction However, If you intend to become a "power user" of MS-DOS you will want something more comprehensive than this book — like the version of MS DOS 6 2 that comes with the Microsoft manual

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Internet Talk Radio: Geek of the Week

BY KEITH SCHENGILI-ROBERTS

Title *Internet Talk Radio: Geek of the Week*
Publisher: ORAudio
Price $9.95 U.S

As the Internet increasingly becomes the information resource of choice for many background material that can help users get the most out their Internet connections becomes valuable ORAudio, an off shoot of O'Reilly and Associates (best known for their Unix books) is releasing a unique collection of audio-tapes for true Internet aficionados

The self proclaimed "town crier for the global village Geek of the Week is a series of professionally produced half hour shows that look at topics of interest to Internet users, and provide a lot of background on the structure and operation of this information highway The format is simple a knowledgeable interviewer asks various Internet authorities questions about their fields of expertise

You can actually get Internet Talk Radio for free However each half hour show comes as a single compressed 15MB data file So unless you have unlimited Internet access a lot of hard drive space and a good sound card you may want to save yourself the trouble and get these tapes The relative spontaneity of the radio format means that these tapes are very topical, often opinionated and contain information that is simply unavailable in any other form

Currently there are three titles available "European Networking" contains talks to some of the major figures responsible for setting up Internet sites in Europe and includes fascinating (and often funny) details of working with the many different telecom systems of Eastern Europe

The head of computer security at M I T talks about how he keeps his computer networks secure from the hordes of would be student hackers in "Security and Networks"

"Networked Information & Online Libraries" talks to the Montreal programmer from McGill University responsible for developing the well-known "Archie" program used for tracking down information resources on the Internet ORAudio plans to release new titles monthly

The talks sometimes get technical, but for true Internet fanatics these Geek of the Week tapes will be a proud addition

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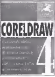

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Understanding Japanese Information Processing

REVIEWED BY KEITH SCHENGILI-ROBERTS

Title: *Understanding Japanese Information Processing*
Author: Ken Lunde
Publisher: O'Reilly & Associates
Price: $29.95 U.S.
Softcover 435 pages 1993

Computing in Japan can't be easy. The Japanese language contains over 10,000 characters divided into four distinct character sets. In addition, there are no real computer standards for encoding Japanese characters, nor standard keyboard layouts, and Japanese text can be read either horizontally or vertically, making Japanese computing a daunting task.

The author of Understanding Japanese Information Processing has made a valiant attempt to make this challenging aspect of international computing accessible — but it is definitely meant for people seriously interested in the topic. The book is filled with table after table mapping thousands of available characters, and describing how to obtain them within specific computing environments. What makes this book worthwhile is the history and general background Lunde provides on Japanese characters and how they are commonly used. He also goes into exhaustive detail about Japanese keyboards, inputting techniques, and how to deal with Japanese-text e-mail. The depth of information in this book will make it of interest to those learning the Japanese language as well as Japanese computing.

It is certainly not an easy read, but it is well written and will reward the reader with valuable insights into Japanese computing on the international level. Understanding Japanese Information Processing has a limited audience, but it is the only English-language book on the topic available. Fortunately, it is a quality book filled with useful information for both novice and experi users alike.

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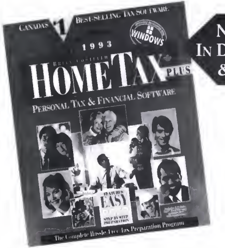
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Innovative Software Store Opens Up in Toronto

In early November a new computer store with a different attitude toward selling software opened in Toronto. Sidea Inc. is situated at 111 Richmond Street West, which will be familiar to many people as the old location of the "World of Software" store. What makes Sidea different is customers can actually try out computer software before they purchase it, thanks to the extensive hands-on displays and demos running in the store. Sidea, short for "Software Information Demonstrations, Evaluations and Assistance" is based on the idea of having a computer trade show in a store. The exhibit area has over 65 computers loaded with over a thousand different programs people can try out and evaluate. In the information area, there is a small library which lets people use an extensive array of CD ROMs, videos and on-line resources to get the computer information they need. Sidea also features regular noon-hour seminars on popular business and consumer software packages.

Contact: Sidea Inc. (416) 362-9068

Canadians Slowly Losing Technophobia

The results of a recent study by Decima Research show that Canadians are beginning to accept new technologies both at work and at home. More than 1,500 Canadians were polled in this survey over a three-week period early in 1993. Technophobia, which is the fear of computers and technology, is definitely diminishing in the general populace.

The study turned up many interesting results. The adoption of technology is being driven by the youngest, most affluent and best educated Canadians. Many Canadians now realize they need a computer equipped with a wordprocessor and a spreadsheet program in order to survive in the current Canadian economy. The purchase of a home computer is seen by the average consumer as their next major technological acquisition for the home, surpassing all other home electronic and entertainment products. Just under a quarter of Canadians say they intend to purchase a computer within the next six months.

The survey asked Canadians about their thoughts on current telecommunications issues. The majority said that they support the introduction of US-based satellite TV signals into Canada, and called for "Open Access" to all information and entertainment networks in North America. According to the survey, Canadians no longer feel it is necessary to protect domestic cable and telecommunications industries from foreign competition in order for them to survive.

Contact: Decima Research (416) 483-1724

Onyx Computers Enters The Maritimes

Onyx Computers Inc., an authorized distributor of computers made by Digital Equipment and based in Markham, Ontario, has just announced plans to expand their distribution network into the Maritimes. Onyx will be offering PCs — including those equipped with the DEC Alpha RISC processor — for sale or rent to clients in Nova Scotia, New Brunswick and Prince Edward Island.

Onyx is a rapidly expanding Canadian firm, and has just completed part of a

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NEC Speeds Up CD-ROM Drives

NEC, the first company to introduce a double-spin CD-ROM drive has just launched a new series of triple- and quad spin CD-ROM drives

In normal, "single-spin" CD-ROM players, data is transferred at a rate of 150KB/second to the computer a standard based upon the rate that data is transferred from music CD players. Computer users can utilize the greater data transfer speeds of these faster CD ROM drives to speed up data retrieval and also to display smooth motion video and animation

The NEC Multispin 3X models transfer data at a rate of 450KB/second and have read-access times in the region of 195-250 milliseconds. They come in external, internal, and portable models, and can be used in either PC or Macintosh computers Prices range from C$630 for the Multispin 3Xp personal model to $831 for the Multispin 3Xe external model.

The NEC 4X is a quad spin CD ROM drive which can transfer data at 600KB/second It is aimed at the professional market and costs approximately $1 400

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Second Place Finish For Simon Fraser

A team of undergraduate students at Simon Fraser University in Burnaby B C beat out 34 universities including Stanford University, to take second place in a computing contest in Oregon

The SFU team led for most of the contest and solved the first problem in a record 14 minutes It completed the first four problems before any of the other teams and was leading until a half hour before the clock ran out In the end the Berkeley team completed the fifth problem in the final moments of the competition and took first place

The competition was based on the teams ability to solve nine problems with a computer The problems ranged from writing a program to keep track of bowling scores, to creating a new way to compress data The contest had a five hour time limit.

The SFU team will compete at an international meet in Phoenix AZ in March 1994

Contact: Simon Fraser University 604-291-3210

NEC's "Hot" Little Versa Notebook

NEC has revamped its Versa line of notebook computers by launching the Versa E series Available in either monochrome or TFT active matrix color display versions the new Versa notebooks use Intel s new SL Enhanced 486 DX2 microprocessors. These processors use only 3 3 volts and come in either 40MHz or 50MHz configurations in the new Versas

The Versas also have the ability to "hot swap" some components so that you do not have to switch off your computer when you change its components When the battery level is low, a user can remove the diskette drive and plug in an additional battery pack to continue use The display is also detachable, and can be turned around to face an audience Users with monochrome models can upgrade to the color version simply by buying a color screen, available from NEC Though not hot swappable the hard drives can also be easily removed and exchanged with other hard drives The Versa hard drive capacities range between 120MB and 340MB

The Versa has trackballs located directly under the space bar and is easy to use for both right and left handed users It also comes with TouchPen capabilities, so it will accept input on screen from either a finger or pen The Versa can be used continuously for up to 4 8 hours

Final prices have not been determined, but expect the monochrome model to be priced in the C$4 000 range and the color model in the $6 000 range

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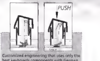

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news*bytes* EXCLUSIVE NEWS

Captain Kangaroo Scolds Violent Games

WASHINGTON DC (NB) — At a press conference held in Washington in early December, beloved children s program pioneer Bob Keeshan known to tens of millions as Captain Kangaroo joined two Senators in criticizing the graphic violence found in some video games Mr Keeshan said this violence is interactive resulting directly from the action of the player, making it far more threatening than mere passively viewed violence seen on television and in movies

Senator Joseph Lieberman (D Conn) and Herbert H Kohl (D Wisc) joined Captain Kangaroo in calling for voluntary labeling of such violent programs and suggested that if the publishers don t take action on their own that Congress will.

Specifically cited at the press conference were two SEGA games Mortal Combat, and another which shows graphic abuse of women.

Compufrog Saves Frogs

MADRAS INDIA (NB) — The Madras chapter of Blue Cross of India has developed software which can serve as an alternative to dissection and killing of frogs Named Compufrog, this menu-driven software has been designed to carry out experiments, detailed examination and study as well as show animated sequences to explain the working of the organs of the frogs

It is believed that millions of frogs are killed every year worldwide to carry out experiments in laboratories in the name of research and teaching.

New Brunswick Goes All-Digital

SAINT JOHN (NB) — The telephone network serving this province is now entirely digital, making New Brunswick the first province with all-digital service and telephone company officials believe the first province or state in North America with totally digital service

Telephone subscribers in the province are less likely to care about firsts than about what the milestone means for their telephone service though What it means is that the standard telephone service in New Brunswick today includes touch-tone and built-in voice messaging and by early 1994 it will also include the ability to return calls automatically when they are missed or encounter a busy signal plus three-way calling

The all-digital network has taken 12 years to build and cost the company about $236 million, company officials said.

Contact New Brunswick Telephone 800-287 2057

training

DESIGN BASICS

A Few Words on Type

BY SUNNY HIRAI

A lot of attention has been paid to the number of features in today's desktop publishing software Unfortunately many people don t realize that sophisticated software does not lead to great design In fact the most sophisticated software presents a lot of room for graphic design abuse

Take CorelDraw! for example, an excellent program for doing almost anything related to publishing. There are myriad features available and enough fonts and clipart to fill a 500-page book (which the company has done) Of course having 750+ fonts and 18 000 + clipart images doesn't mean you have to use more than one or a few at a time — but it sure is tempting.

Well don't succumb temptation A lot of people feel that an effective design is one that fills up all the space with as many fonts as possible This isn t necessarily so In fact the result is often a lack of white space and an inconsistency in design The focus of this article will be on typography — the letters and words that make up a page

Choosing a Typeface

A font is a specific size and design of a letter form A typeface is a family of fonts that all look similar Basically, there are three types of typefaces serif sans-serif and decorative.

Calligraphy is Classy

Old English is Ancient

COTTONWOOD IS RUSTIC

Serif typefaces can be identified by short strokes, called serifs at the ends of each letter These short strokes help lead the reader's eye from one letter to the next Because of this, serif fonts are easier to read and often preferred for text (like the words you are reading right now) Variations on serif fonts can help emphasize the character of your document

Bookman is Friendly

Typefaces with rounded serifs tend to look friendly

Times is Official Looking

Typefaces with sharper serifs tend to look more official.

Sans serif typefaces on the other hand don t have serifs and are more difficult to read in large chunks Sans serifs fonts are often used in display such as titles and head-

Continued on page 79

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Words on Type

Continued from page 77

ings and can be used effectively in captions

Arial is Easy

Arial which is a spitting image of Helvetica is one of the more easily read sans serifs fonts

Futura is Futuristic

Futura has even strokes and curves making all of the letters similar

This gives Futura a modern look but it is also difficult to read in long sentences

Decorative typefaces generally don t fit in either category and are often very difficult to read Because of this decorative typefaces should be used as display type (titles and headings) rather than in body text

Decorative typefaces are good at setting a tone and provide contrast with serif and sans-serif typefaces

As you can see, these typefaces are attractive but you certainly wouldn t want to read a paragraph of text in them as they would become very difficult to read

Reading a paragraph in this typeface will slow most of your readers down to a crawl, not to mention the headaches

Type Style
Often there are many variations available on a typeface each have a slightly different look. These variations can be used to give contrast to a document and to provide emphasis.

Bold. *Italic* ***Bold Italic***

Bold can be used effectively in display text to break up large sections of body text For instance this article is being broken down into different sections by a bold type style

Italics is excellent at emphasizing a word or group of words in body text Using underlines or bold type styles in a paragraph often give it a choppy look which should be avoided

Italics is good for *emphasizing* a word in a sentence

This sentence will look way too choppy if **boldface** and underline are used within it.

Alignment
Another area where the features of a desktop publishing program can be abused is alignment Generally there are four types of alignment Left, Center Right and Justified

The most abused form of alignment is justified Because it is so easy to do, most people use it for everything, and often this isn t a good idea Justified text is more difficult to read because it causes the space between words and sometimes letters to vary in order to fill up a line

This can create problems in readability and sometimes creates rivers of space running down a paragraph

Short sentences like this can look extremely spaced out as is sometimes seen in newspapers

There is nothing wrong with justifying text as they can enhance the look of columns as seen in this newspaper Just be careful to look out for too much white space and rivers of white space running down a paragraph. One way to fix these problems is to use hyphenation but be careful not to abuse this feature as well Too much hyphenation slows a reader down.

Centered alignment is often used in headlines However center headlines which run several lines can making them difficult to read Many centered lines stuck together can become difficult to read

Right alignment is sometimes used in headlines but is more often used for captions on diagrams

This headline is right aligned for contrast

This line is
right aligned to
show effective
use of captions

And of course, left alignment is the bread and butter It can be used effectively in both body text and display text Sometimes the best alignment for the job is left alignment, yet it is simply ignored because it is too common

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Tracking

Tracking controls the amount of space between each letter in a word. In some word processors tracking is referred to as character spacing or letter spacing. The key rule here is the larger the typeface, the less space required between each letter.

Loose Tracking

Loose Track

Tight Tracking

Tight Track

Notice how the letter spacing looks fine in the small text at the top but not in the bottom text? Also, notice how the tracking is too loose in the larger text at the top but is fine in the bottom. Tracking should be adjusted to improve legibility.

Tracking should be increased when setting white type against a black background. When setting white against black, also make sure that the characters have suitably thick strokes and are large enough and that enough black surrounds the words.

Good Design

his text is hard to read.

Proper indenting

The default tab settings on most word processors and many graphics programs are much too deep for column text. Usually these programs are set for half an inch. Generally speaking, indents should be set between two and five space, or about 0.2 inches in from the left margin.

This paragraph is indented correctly. This paragraph is indented correctly.

This paragraph is not. This paragraph is not. This paragraph is not. This paragraph is not.

Balancing a page

This gives you a brief yet concise introduction to the importance of setting words on a page with care. Another thing to keep in mind when formatting a page is to keep the page consistent. Don't mix too many different typefaces, type styles and ideas on a page. Keeping the ideas consistent (i.e. similar) throughout a document says much more about your sense of style than a dozen different fonts.

In the next article, I will focus on the overall identity of the page rather than the individual words and paragraphs. This will include taking a look at contrast, balance, the effective use of white space and other. Meanwhile, see how many design principles you can make use of in your next design, whether it be an advertisement, a menu, an annual report or even just a memo. ■

Sunny Hirai is president of Vancouver based Salt and Pepper Graphix 604-433 0511

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CANAM COMPUTER CLUB — for serious computer hobbyists. Breakfast meetings are held every Saturday morning at Olive Restaurant in Warden Woods Mall, Scarboro. The Club has a sister group in the U.S. where new ideas and help are exchanged. Membership is free but a full breakfast is $3.00 including gratuity. For info call Cy Leonard at 281-0318.

CASE SPECIAL INTEREST GROUP — A special interest group is being formed to help people interested in learning more about CASE. The purpose is to provide a forum where members may share their experiences. Experienced users or those interested in CASE call Joe De Silva at 252 1400 or Rob Beckman 826-2694.

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CLUB CUBASE — Toronto area users of Multiwrong Software products especially their powerhouse sequencer Cubase, now have a forum to share information and develop skills. Club Cubase meets at 7:30 pm on the last Monday of every month, in Room C420 of the Casa Loma Campus of George Brown College, 160 Kendal Ave. For more information contact Club Cubase at 62 Hemworth Drive, Willowdale, ON M2H 3C2 or call 496-9905.

CLUB MAC COMPUTER GROUP OF ONTARIO — All Mac users, Macintosh OS & related issues, meets 2nd Tuesday, Michener Institute, 222 St. Patrick St. Toronto, 1 pm to 10 pm. infoline 492-1702.

COMPUTER TRAINERS NETWORK — A group of teachers, advisors and consultants who meet the first Thursday of every month to discuss training in computer related issues. Meeting format consists of refreshments, business portion, guest speaker and membership is available. Location 121 King St. W. 24th Floor, Toronto, Ontario. For more information please call Veronica of Vision Computer at (416) 323-0408.

CYBERPUNK RESEARCH LABORATORIES — Many hacks in research of grotesque machines, RAM and fairytales. For further data write c/o CyberPunk Research Labs, Seneca College of Communication Arts, 1124 Finch Ave. West, North York ON M3J 3J3.

ELECTRONIC GAMES PLAYERS' ASSOCIATION (EGPA) — EGPA announces the start of their Canada-wide search for computer and video game players interested in swapping their used games. As a member of the EGPA, individuals will be able to exchange game software. Members will also be able to buy used games without a trade. Membership available for the first year with an annual renewal. If you are interested in joining or would like more information, please send $1 to cover postage and handling to: EGPA, 292 Palmer St. North Bay, Ont. P1B 7Z3. The one dollar is applied to your membership fee.

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LOGIC — An Independent Apple User Group. Provides a support and information network to users at all levels. LOGIC accomplishes this by holding monthly meetings, hosting Special Interest Group meetings, providing an electronic bulletin board, publishing the Maple Orchard magazine (free to members) and maintaining an extensive library of shareware and public domain software. Meetings 1st & 3rd Tuesday of the month. North York Centre, 5110 Yonge St. in the Memorial Hall at 7:30 pm. Messages (416) 323-9808. BBS (416) 481-9711.

METRO TORONTO ADAM GROUP (MTAG) — Supporting ADAM, CP/M, TDOS. Users contact (416) 424 1352 or write to P.O. Box 185, 200 Adelaide St. E., Toronto, ON M5A 1M1. Meetings 2nd Monday of each month. 1185 Alpine Rd (Community Centre) and 4th Sat. each month at the Pape Ave. Community Center. Bi-Monthly newsletter.

MISSISSAUGA COMPUTER CLUB (M.C.C.) — Supporting IBM-PC, Macintosh and Amiga systems. Presentations, Demos, Raffles, SIG's and "LOADS" of shareware; also a monthly newsletter. ALL WELCOME. If interested or further information please call Robert Burgess (President) at (416) 890-4500 or "TOTAL ACCESS BBS" at (416) 568 5294. Meeting held the last Tuesday of each month.

NEXT USERS GROUP — NeXT computer support. 2nd Thursday, Toronto Western Hospital, corner of Bathurst & Dundas, yellow elevator to 6th floor, 7:00 pm. Daniel O'Connell (416) 365-1000.

PCCT (PERSONAL COMPUTER CLUB OF TORONTO) — PC users, 3rd Tuesday, St. Gabriel's Community Centre, 672 Sheppard Ave. E. (2 blocks East of Bayview, North side), North York, 7:00 pm. Membership includes shareware, BBS, special interest groups (SIGs) & workshops. Information (416) 244-6266.

TAF – TORONTO ATARI FEDERATION — ST/STE/Falcon computers. 300 members. BBS, Newsletter, SIGS for MIDI, DTP, General and more. Meets 1:30pm. Third Thursday of month in North York Memorial Community Hall in the NY City Centre Library building, 5120 Yonge St. at Park Home. BBS: (300-16.8) 235-0318. Info-Line (voice) 425-5351.

THE CANADIAN AUTODESK MULTIMEDIA USER GROUP — Interested Users of Autodesk Multimedia products are invited to call Pia Zimpel at (416) 928-8165.

THE CANADIAN INFORMATION PROCESSING SOCIETY — presents the following meetings at the Toronto Board of Trade, 3rd Floor: Dec 2, 4 pm; Dec 7, 5:30pm; Dec 16, 8:00pm. For further information call Brian Gilbey 351 6283.

THE COMMUNICATION NETWORK — Join our Social Network/Support Group for SHY people and enlarge your Social and interpersonal skills. Participate in weekly organized social and cultural activities. Weekly meeting from 7:10pm. Pre-registration is required. Call for more info at 861-6096 or 651 2080.

THE DURHAM P.C. USERS CLUB — supports local computer enthusiasts with monthly meetings and a newsletter, a software library and many special interest groups. Meetings on second Thursday of each month at 7:10 pm (free admission). Meetings held at CAW Local 222 Hall, 1425 Phillip Murray Ave., Oshawa. Contact Barbara Rice at 416-434 7429 or Bruce Laycraft 416-728-9361.

THE ELITE GROUP OF 3-D PROGRAMMERS — (E.G.3D.P.) in association with L.T.P.D. Dedicated to Atari users. For more information write to L.T.P.D. c/o (E.G.3D.P.), 37 Marilyn Ave., Box #2, Toronto, Ontario M6S 2G8.

THE SOCIETY FOR TECHNICAL COMMUNICATION — Toronto Chapter's December meeting is at 7:00 on Tuesday, Dec 14th at the North York Civic Centre, 5100 Yonge St. (in Gold Room A). Speaker: STC member Tony Alderson. Learn how information technology affects paper-based documentation. For more info. call Chris Mill at 406-7080.

THE TORONTO COLOUR COMPUTER GROUP — meets on the 2nd and 4th Mondays of each month. For more information call Larry Osborne at (416) 972-1895.

THE TORONTO GUPTA USERS GROUP (TGUG) — Open to anyone who is a user, developer or vendor of Gupta SQL database software. Meetings held in Feb, Apr, June, Sept, Nov each year. Contact Terry Lyons at 416-620-6565 X639 or 416-620-8613 (fax) for more info. Corp membership fee $50/yr (up to 3 employees). Single membership $25/yr.

TIMEX SINCLAIR USERS CLUB — All Timex and Sinclair Computers. 1st Wednesday of the month, 14 Rachome Court, Scarborough, ON M1K 2Y1, 7:00 pm. Demonstrations, bi-monthly newsletter. Voice Info (416) 751-7559.

TORCHI (Toronto Region Computer Human Interaction) — Meets every second Wednesday of the month from 7:00 pm–10:00 pm. Members come from business, academic and government to share interests in human use of computers (affected in human factors, usability, Ergonomics, the user interface and many other related disciplines). For more information re speakers, topics and membership. We are the local chapter of SigCHI, a part of ACM. Call M. Boshes (416) 449-2001.

TORONTO APL SIG — An educational and social organization concerned with the use and promotion of APL computer language. 4th Monday of each month at 6:30 pm (excluding the Summer) at BCE Place, 181 Bay Street, 10th Floor. Or write: Toronto APL SIG, Box 384, Adelaide Street P.O., Toronto, Ont. M5C 2J5. Contact Ben Best (416) 962-3193.

TORONTO BORLAND USER GROUP — meets 2nd Thursday of every month at 5:00 pm. Free BBS 211-9785. Call for next meeting Loc. & list of presentations. Learn about PAL (Paradox Application Language), add-in products, Paradox tips and traps. For membership info, contact Doug Campbell 496-2128.

TORONTO USERS GROUP — User members support of Intermediate CL. Next meeting is held on Sept 22nd at the Howard Johnson Plaza at 400-401 Keele St. Please contact Wendy Beddy at suite 2500, P.O. Box 77, Toronto Dominion Centre, Tor., ONT. M5K 1E7 for more information or call (416) 867-2546.

TPUG (TORONTO PET USERS GROUP INC.) — Commodore users (PET, 64/128, Amiga, CDTV, MS-DOS, etc.) meets Tuesdays (1st, 128; 2nd, Amiga; 3rd, GEOS; 4th, 64). York Public Library, main branch, 1745 Eglinton Ave. W. (near Dufferin), 1:30 pm. 3rd Thursday Alderwood United Church, 44 Delma Drive, Etobicoke, 1:30 pm: software library, newsletter & BBS information (416) 253-9637.

TRACE — Toronto Regional AutoCAD Exchange. Presentations on the last Tuesday of every second month. Held at the Malton Community Centre, 3540 Morningstar Drive. For details call Tim Lucas at (416) 756-9766.

ZIM USERS GROUP — Revival of the Toronto Zim Users Group. Emphasis on exchange of ZIM technical expertise in a friendly environment. Contact Fay Rakoff. Phone (416) 979-6214 or Fax (416) 979-4888.

CALENDAR OF EVENTS

INTERNATIONAL

MACWORLD EXPO San Francisco January 6-8 '94, Moscone Convention Center. Washington May 10-12 '94, Washington D.C. Convention Center. Call the MACWORLD Expo hotline at (617) 361-3041 or (416) 620-8412 in Canada.

CONSUMER ELECTRONICS SHOW WINTER Jan 6-9 1994, Las Vegas, NV. Show Management: Electronic Industries Assoc. 202-457-8700.

PACIFIC RIM COMPUTER COMMUNICATION AND BUSINESS SHOW Jan 11-13, 1994, San Diego, CA.

OBJECT WORLD BOSTON Jan 11-13 1994, Hynes Convention Center, Boston, MA. Focusing on the commercial and practical aspects of object technology. Contact Lynn Fullerton at IDG World Expo at 800-225-4698 or 508-879-6700.

PHOTOSHOP CONFERENCE Jan 24-26 1994, San Francisco. Show management: Thunder Lizard Productions, 206-632-3431.

COMNET '94 Jan 24-27 1994, Washington, DC. Featuring over 450 exhibitors, 22 in-depth tutorials, over 70 conference sessions, two keynotes, a special plenary session on ATM, Executive Symposium and the annual Town Meeting. Contact Eileen Kelm at IDG World Expo at 800-225-4698 or 508-879-6700 or MCI Mail 603-9865.

THE AMERICAN PHYSICAL THERAPY ASSOCIATION is sponsoring a two day toll-free hotline on Feb 3rd and 4th 1994 to answer questions and provide help for sufferers of repetitive strain injuries. For information call the RSI Hotline at 1-800-955-1840 or 1-800-955-1840.

Contact: APTA 703-706-3217 or 703-684 APTA. **ASIACOMM** February 12-14 1994, Bangkok. Contact: Allied Exposition Companies 203-964-0000.

MACWORLD EXPO Tokyo, Feb 17-19 1994, Nippon Convention Center, Tokyo Japan. Contact: Susan Leary at IDG World Expo at 800-225-4698 or 508-879-6700.

UNIFORUM '94 Mar 21-24, 1994. An extensive conference focusing on Open Systems, also offered: over 70 conference sessions, 10 tutorials, 4 hands-on workshops, 3 plenary sessions and two executive symposiums. Moscone Convention Center, San Francisco, CA. Contact Tena Ware at IDG World Expo at 800 225-4698 or 508-879-6700.

COMPUTERWORLD EXPO Auckland, NZ, Mar 23-26 1994. Contact: Matt Mandino at IDG World Expo at 800-225-4698 or 508-879-6700.

NEW MEDIA EXPO April 12-14 1994, Los Angeles Convention Center, Los Angeles, CA.

A sales and marketing event for multimedia manufacturers and suppliers focusing on existing market opportunities and new media technologies. Call 617-449-6600 ext 4123.

WINDOWS in WORLD/MILAN April 13-16 1994, Spazio Milano Nord, Milan Italy. A premier event for vendors and buyers of Windows hardware and software products. Special pavilions and conferences highlight the latest in market trends. Contact: Chris Blanchard at IDG World Expo at 800-545-3976 or 508-820-8620.

APPLE '94 April 21-23 1994, Castle of Vajdahunyad City Park, Budapest! Hungary. Part of the MACWORLD Expo series, the most successful trade show series for Apple-related products and services. Contact: Susan Leary at IDG World Expo at 800-545-3976 or 508-879-6700.

PC WORLD EXPO April 25-27 1994, Stockholm, Sweden. Contact: Chris Blanchard at IDG World Expo at 800 545-3976 or 508 820-8620.

SEMINARS

Flynn McNeil Raheb & Associates is offering a series of information technology seminars free of charge to executives and senior managers.

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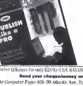

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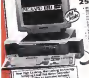

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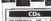

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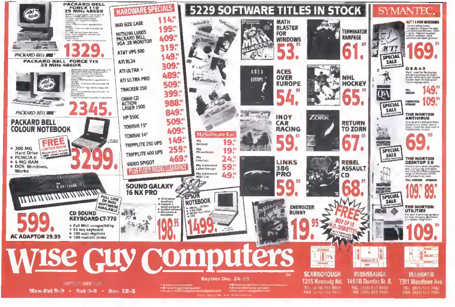

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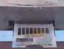

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